THE physical therapy REVIEW

A Medical Caseworker Looks at the Physically Handicapped Adolescent — BLAKELEY

Physiological and Pathological Principles in Restorative Medicine in the Aging — DACSO

Solving the Problem of Self Care with Self-Help Devices — CICENIA, ROSENTHAL, and SPRINGER

Suggested Salary Ranges for Qualified Physical Therapists

Case Report — ERICKSON

Suggestions from the Field — TANDBERG

Volume 37, Number 11 **November 1957**

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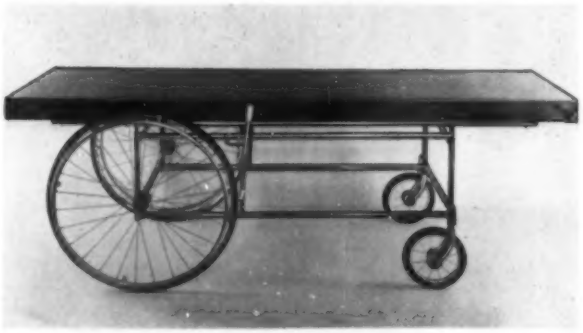

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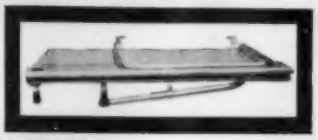

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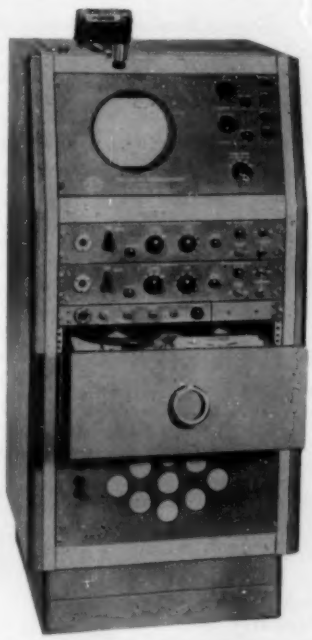

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NOVEMBER 1957
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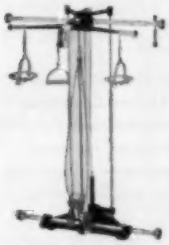

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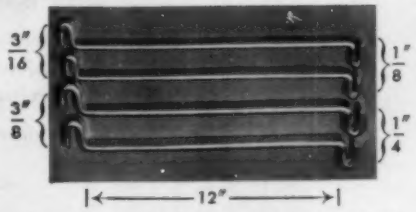

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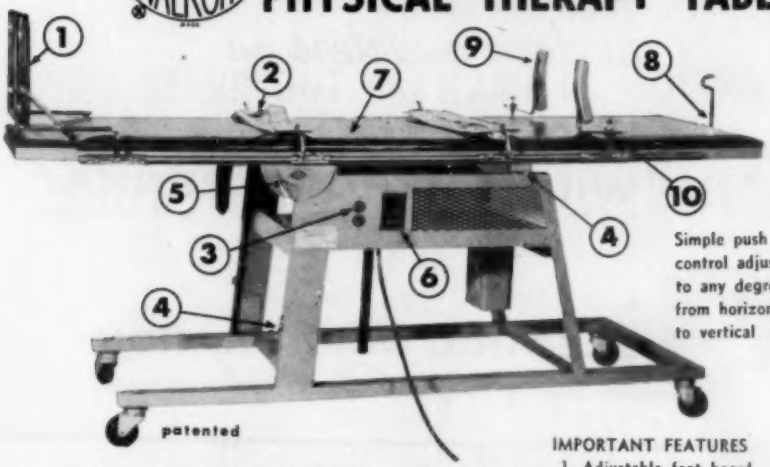

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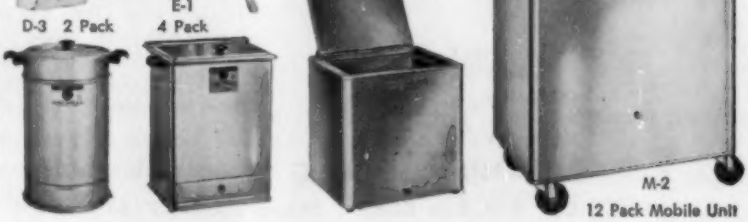

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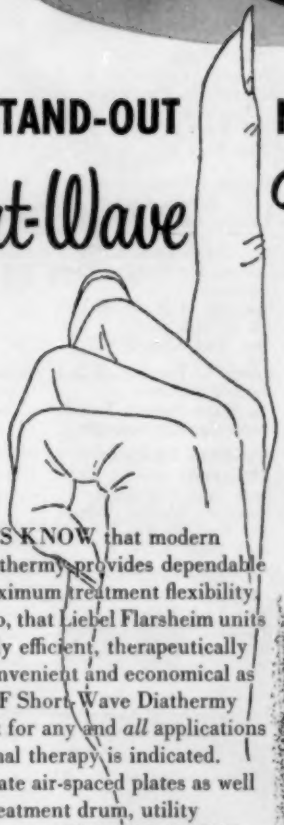

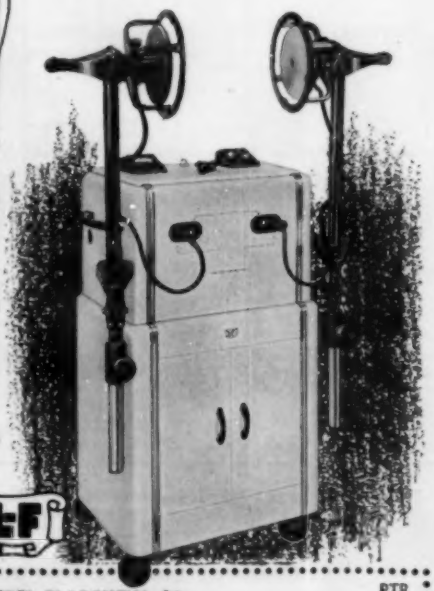

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Advanced Course in Physical Rehabilitation Methods	NYU-Bellevue Med. Cen. and NYU Sch. of Education	Mrs. Edith Lawton, Dir. Courses for Physical Therapists Institute of P. M. & R. 400 E. 34th Street New York City, N. Y.	Nov. 18 — Dec. 13, 1957 Feb. 3 — 28, 1958 Apr. 28 — May 23, 1958
Physical Therapy in the Care of Neuromuscular Disease	Georgia Warm Springs Foundation Warm Springs, Georgia	Robert L. Bennett, M.D. Medical Director Ga. Warm Springs Found. Warm Springs, Georgia	January April October
Upper Extremity Prosthetics	Postgraduate Medical School & College of Engineering New York University	Prosthetics Education Program New York University Postgrad. Medical School 550 First Avenue New York 16, N. Y.	Oct. 28 — Nov. 8, 1957 June 9 — 20, 1958
Above-Knee Prosthetics	Postgraduate Medical School & College of Engineering New York University	Prosthetics Education Program New York University Postgrad. Medical School 550 First Avenue New York 16, N. Y.	Dec. 9 — 20, 1957 Jan. 20 — 31, 1958 Feb. 24 — Mar. 7, 1958 Apr. 28 — May 9, 1958
Principles of Rehabilitation	University of Pennsylvania & U.S. Office of Vocational Rehabilitation	Rehabilitation Center Hospital of the University of Pennsylvania Philadelphia 4, Pennsylvania	Dec. 2 — 6, 1957 Feb. 3 — 7, 1958 April 7 — 11, 1958
Prosthetics Education Program for Therapists	University of California & U.S. Office of Vocational Rehabilitation	Prosthetics Education, B4-229 Medical Center University of California Los Angeles, California	Jan. 20 — 24, 1958 Mar. 17 — 21, 1958 June 16 — 20, 1958

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The Physical Therapy Review

Official Publication of The American Physical Therapy Association

A Medical Caseworker Looks at the Physically Handicapped Adolescent*

M. Genevieve Blakeley, B.A., M.S.W.

The physically handicapped adolescent referred to here is the one whose physical problem is congenital—not the one who has had several years of physical normalcy before disease or injury has made of him a handicapped person. The latter presents a vastly different picture and although he deserves equally serious consideration, he will not be discussed in this paper. The afflicted, that is the blind and deaf, are also excluded.

The thoughts that are presented here are the results of my 20 years of experience in professional life, first as a high school teacher, then as a graduate student in psychiatric social work, later as a caseworker in a child protective agency, then as a caseworker and eventually supervisor in an orthopedic clinic, and finally as the executive director of that clinic, which in social work terms is a medical social agency. The majority of my experience has been with adolescents who are in my opinion in the most complicated and controversial defined period of life. This is the last step to adulthood and yet at no other time is the change so marked. One day the individual is a child, and the next an adult in physical appearance, and yet for the most part he has retained a childlike intellectual and emotional comprehension. The transition is felt to cover roughly the teens or even the years from 12 through 21. Actually, one of the most fascinating studies of human, emotional development covers the fact that even the most mature of us do not grow up in all areas of our daily operations no matter how long we live, and furthermore no matter how mature we are or what we use to measure maturity, we all regress from time to time to adolescent or even juvenile behavior. Growing up never ceases.

My next responsibility in this presentation is to explain briefly how the social caseworker fits into this picture of the multidisciplined team that works with the handicapped. Casework, and specifically medical casework, was first introduced into the United States in 1905 by Dr. Richard Cabot at Massachusetts General Hospital to assist the medical team in understanding what constituted the patient's place in society and how this affected or was affected by his illness. The caseworker's fundamental role then and now is to establish a relationship that permits him to understand the patient's needs and enables him to motivate the patient to use his own capacities towards a satisfactory solution of his problem or adjustment to it by using the strengths within himself and, if necessary, the facilities provided by the community.

The physically handicapped adolescent is a patient with a defined physical problem. The important task at hand for us, the team of professionals, is to correct in so far as possible the defect, taking into consideration the effect that the innumerable ramifications have had,

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are having and will have on his total individual living situation.

In the discussion of adolescence there is a tendency to limit the top age range too specifically. This leads us to expect that no matter how little we have contributed to the adolescent's progress emotionally, environmentally, and intellectually, somehow miraculously at 21 he will be an adult not only physically but in all areas of living.

The physically handicapped adolescent who has been a physically handicapped child has had one type of tangible complication to carry along with all the others on what I consider the most arduous trip of his life. It is different from the problems of others but it is not necessarily any more insurmountable. Remember that just as he does not miraculously become an adult, he does not miraculously become an adolescent.

We know that there are thousands of parents today facing with utter dread the coming of their children's adolescence. There has been so much publicity about the teen-ager, especially the delinquent one, that we almost forget there are any other ages or any other time of life. There is so much energy going into planning for what might come that there is little left to spend on what is now; yet nothing happens in a person in adolescence that did not have its roots firmly implanted in the developing personality by the age of 2 years.

Dr. Benjamin Stammell, a Detroit practicing psychiatrist, wrote on the emotional adjustment of infants as follows:

> "In the past, parents with poor qualities of leadership probably relied mostly on physical punishment, but modern teaching, stating that this type of treatment is shameful, has deflected them into forms of control such as chronic scolding, prolonged moral disapproval, warnings of dangerous consequences of misbehavior, and even excessive reasoning and overexplanation. These influences are manifested by the age of two years in tense, anxious, dependent, self-centered children, and lay the groundwork for the formation of specific neurosis and character disorders." [1]

You can, therefore, spell out for yourselves the complications added to those first two years by the presence of a physical handicap.

When I did my graduate work, my field work was done in a psychiatric clinic for children and I had the good fortune to be associated with and trained by Dr. Maud E. Watson whose positive feeling for children and theirs for her I have never seen equaled. Let me quote something of hers,

> "The complexity of the day with its varying, far reaching, but closely interwoven international relationships, worldwide economic insecurity, and its attendant needs with the necessity of a new evaluation and a better understanding of a more effective industrial system, has brought about a universal need of mental hygiene with perhaps even more practical and philosophical implications than previously. The adult, bewildered by rapidly shifting social standards and an economic competition which has become almost overwhelming, finds day by day reality a thing which he must face with an essential maturity and not recourse to phantasy, withdrawal, or invalid reactions. Otherwise, the outgrowth of his own emotional conflicts will bring about a constant struggle between meeting the reality of a situation and his own need to evade it as long as possible."

Was that written yesterday? No. Last year? No. It was written 25 years ago. I have quoted it for two reasons. One, there has never been an era that people have grown up in that did not present more vicissitudes than research and education had yet to study and prepare for. We speak of planning our future, or planning for our future, when we have all we can do to cope with the present. Why? Because as Dr. Watson said there can be a constant conflict between facing the reality of our given situation and what I consider an almost innate human need to evade it as long as possible. Secondly, this statement emphasizes the universality of the idea that reality is negative and unpleasant, and well it may be, but humans are prone to overemphasize the negative. We are seldom happy with what we have. This gives rise to competition which can and should be positively channeled into accomplishment. The most constructive approach I know of to working with a handicapped adolescent is to remember his individuality. The indispensable prerequisites for quality of service, which we as professional service people must be basically concerned with, include certain fundamental convictions—

1. A deep conviction as to the individual worth of man which implies his rights to service on satisfying terms with himself and the world,
2. A conviction that social problems are man made and can be man solved,
3. A deep conviction that each of us as pro-

fessional people have something to contribute to the problem solving.

If we are willing to broaden the definition of "physical handicap" we will find that actually we all have one of some kind. We're too fat, too thin, too tall, too short, too bright, too stupid. This we admit to ourselves. To the other fellow we say "I'm just right" for whatever the activity at hand. Why can't we look at the handicapped child in terms of what "he's just right" or well for, however limited it might be, so that by the time he is an adolescent he is well on his way to accomplishing what he is just right for.

Handicapped children, especially congenitally handicapped ones, require an intensive treatment program whether continuous or intermittent. So many things must be done for them that they are lulled into a false sense of security and robbed of a sense of accomplishment unless we who assist in training and treating them remember always to be patient during the learning process. We must respect the standards the child is setting for himself as he grows and learns by seeing and comparing, and we must remember he is learning those standards from us.

A moment ago I referred to us, the various social and treatment professions, as assisting in the training. Let me change that to "assisting" in the "growing" as I feel this has a far more positive implication. Whom do we assist? The child? Yes, but also we assist the parents. First of all don't ever forget there are two of them, and secondly, don't ever forget that this is their child—their child, who in the normal course of events, will live with them 24 hours a day, depend upon them, learn with them, grow with them, and never outgrow his fundamental need for their love and approval. We do not presume to step between man and his God, or doctor and his patient, but I am appalled at how often we step between a child and his parents. No wonder by the time he becomes an insecure obstreperous adolescent, full of the natural conflict and rebellion, full of the instability and confusion, full of the drive and contradiction of this age range, his family is almost ready to give him to us. And we, in our turn, are equally ready now to give him back. In recent years there has been a trend towards punishing the parents for the delinquent acts of their children. Now we are seriously questioning the validity of this. Everybody will give advice, everybody and his brother will interfere, and yet all of these everybodies step back and leave the parents to pay the piper. Haven't they already been punished, if this is what we feel is their due? Haven't they had to look at their own failures with their own creation? Parents live through their children far more intimately and emotionally than we often realize—succeeding with them and failing with them.

Fritz Redl has said "It takes a lot of hard work to produce a neurotic or delinquent child. Why not spend that energy in producing a secure, well adjusted one?"

Basically, the greatest need the adolescent has, handicapped or not, is that his parents and all their helpers, that is any of us who become a part of his life because of his need for our services, understand the nature of the struggle he is making in growing up and recognize his need for our understanding. He needs guidance but he wants to be independent. Let him, but stand by; don't walk out on him. He'll regress, but with support each regression will eventually help to consolidate a gain because he will have travelled the path before and some of the terror of its strangeness will be gone.

Earlier I referred to my teaching experiences; it was brief—three years. I was young, chronologically and emotionally, and yet I learned one fact that I have carried all through my professional training and practice, and that I try to remember each day as an administrator. If you ask a sincere question of an adolescent you'll get a sincere answer. If he can believe, because it's true, that you really want to help, he'll let you know how, what kind of help he can use, and when.

Right now some of you are thinking, "But she hasn't really given the physical handicap sufficient attention." I think I have. How can we ignore it—we're treating it, we're trying to improve it. At best the child will always live with it. We can't deny it but we must never overemphasize it. We must never become so involved in our own feelings about it that we forget the patient's feelings. He lives with it—listen to him. The most successful people in any walk of life, and especially in the personal services, are those who really hear what is said to them. If we teach him to live and do not saddle him with additional problems and worries, he'll be learning to live with his handicap.

I have purposely avoided case histories. They have their place in professional learning and growth. They are interesting to listen to or to read. They always remind each one of us of someone we have known. But they also tend to lull us into believing we can completely categorize people and establish absolute rule of

operation. I have always been perverse in this regard; yet I will concede to one rule that has been said in many different ways down through the ages, "Do unto others." This means respect every individual right of others and then we can expect to have ours respected.

In the process of preparing this paper a long, long procession of adolescents marched through my mind. They are adults today. They made it—single amputees, double amputees, cerebral palsies, polios, osteos, and on down the list. The vast majorty are married, working, happy members of their community. I concentrated very hard to think of the people who would fit the rule that a physical handicap implied an emotional one, or even a potentially emotional one, that did not also have bases for many of the other conflicts. This turned out to be by far the smaller group. Perhaps you think the case histories of many are calm everyday stories about everyday conflicts. They are not—rape, incest, robbery, and even murder run through them; but they are adjusted. They are grown up; they live with their handicap and often it is one of their lesser troubles. The really unadjusted ones are few, but then so are the juvenile delinquents when compared to their total number. Here again we frequently concentrate so hard on the failures, that we take the successes for granted.

All of us here have chosen to train and work in a personal service profession. No doubt we have often thought of ourselves as altruistic, self-sacrificing members of society, dedicated to the service of others. Well, we are, but we have also weighed what we give against what we get; status, satisfaction, self respect, and those advantages are what we want. In self respect, especially, lies the big reason for how much respect we have for others. Unless I like myself, I cannot and do not like you. To like myself, I must have travelled the road to maturity with reasonable success before I can lead others with any hope of positive results. When we joined a profession, the established members set up certain requirements aimed at eliminating those who would not add to the profession's status and contribution to the whole. What do we mean by "professional"? I came across a definition recently that I like.

> "The hope of every profession is to have its practitioners embody the best of its knowledge, experience, skill, and ethics that they will practice with dignity, confidence, and success, and that the nature and contribution of the profession will become so much a part of the practitioner that its perpetuation and continuing progress are assured." [2]

Fundamentally, we are all working towards the same end in our service to the handicapped. In other words I am making a plea for teamwork in all of our dealings and especially in those concerning the adolescent who is already in a most difficult period. We must see that they are not caught up in an energy wasting, confusing competition between professional people who are themselves so immature as to forget the patient in an effort to outshine each other. I have been a member of two professions and in almost 20 years I have asked again and again, why can't we each do our own job and let the other fellow do his. We must remember that our proficiency is part of a whole and not a whole in itself. We must respect each other before we can respect the patient and work on a team for his benefit. Perhaps I have taken the long way around to record a few observations, but in the process I hope I have given you some ideas to consider—ideas of which I try constantly to keep myself reminded.

1. Look at the congenitally physically handicapped adolescent as a specific, individual human being with a definable material problem.
2. Look at that problem in correct proportion to his total environment.
3. Look at that problem in relation to your special contribution to its improvement or correction.
4. Look at the patient and remember he is inseparably a member of a family.
5. Remember we cannot be all things to all people, but in our own area of specialization, each of us can make a constructive contribution to the whole.

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Physiological and Pathological Principles in Restorative Medicine in the Aging *

Michael M. Dacso, M.D.

The practice of clinical medicine consists mainly of application of basic scientific principles in situations where deviation from normal physiology exists. By accepting this fundamental fact one immediately recognizes the need for a solid knowledge in basic sciences as a prerequisite to good clinical practice.

In early childhood and in the higher age—two life periods characterized by rapid evolution and slow regression, respectively—the knowledge of the underlying physiological and pathological forces is of more than esoteric nature. In the process of aging the physiological and pathological elements of regression must wherever possible be recognized and separated; since only by delaying the former and eliminating the latter can a prolongation of life be achieved. It should be pointed out that a prolongation of man's life span is by no means identical with "rejuvenation." All that medical science tries to achieve is a life span as long as physiologically possible with minimal pathological complication.

The physiology and biology of aging is one of the most fascinating chapters in the book of natural sciences.[1,2] Man has always been faced with the inevitability of aging and the many unknown factors causing this involuntary process. There is an increased trend in biological sciences to accept aging as a process inherent in living things and not limited to a sequelae of diseases and stresses to which every living organism is subjected. In spite of this, there would be few histories recorded by medical science in which the patient died purely as a result of aging of the biological mechanism. The physiological factors operating in the process of aging affect the function of every organism of the body. The cardiac output declines, all phases of pulmonary function decrease, the function of all elements of the kidney is reduced, similar reduction can be registered in basal metabolic rate, intracellular water, and many others. Among the pathological causes of aging all diseases are represented, some of them more predominantly than others.

Generally when aging as a physiological or pathological subject is discussed emphasis is always laid on the cardiovascular system. Consequently the functional deficiency of this organ system is better known than that of other equally important systems. In our present paper we have selected to discuss the pathophysiological events of some of the more frequent morbid conditions occurring in the aging patient. Arbitrary as this approach seems to be we chose to follow it recognizing that this subject could not be handled in its totality in one paper.

Osteoporosis is a rather common change in the aging skeletal structure which in spite of its ubiquitous nature has only recently received the attention it deserves from the healing profession. The clinical importance of this condition lies primarily in the fact that it may often cause spontaneous or traumatic fractures. Even without such occurrence it may be responsible for skeletal pain such as low back pain in elderly females. Radiologically, the glasslike appearance of the bones and occasional vertebral compression are characteristic. The most careful biochemical analysis of the osteoporotic patient's body fluids results only in the scantiest of information. Occasionally changes in calcium excretion through the kidneys can be demonstrated. Histologically, except for a marked thinning in the structure of bone trabeculae, no striking changes can be detected.

The normal bone is subject to constant resorption which, partly under the influence of physiological strains and stresses, is replaced by new bone tissue. At times however the new bone formation cannot keep pace with the resorption. A decrease of physiological stresses, a situation frequently observed in the inactive aged, may also be responsible for a form of osteoporosis which sometimes is referred to as "osteoporosis

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due to disuse." The fact that those trabeculae which have a more intensive share in weight bearing are less affected than the secondary non-weight bearing trabeculae indicates the importance of physiological stresses in bone development. These findings suggest the need for continued physical activity in the treatment of osteoporosis. Often such activity must be maintained in spite of the discomfort and pain caused by mobilization. Prolonged bed rest has a decidedly detrimental effect on the bones and almost all other elements of the body. Strict immobilization should be practiced only if its advantages outweigh the adverse effects. Recent investigations suggest that endocrine changes in the aging organism may largely be responsible for alterations in the bone structure. It has been found that the so called "S" hormone of the adrenal cortex due to its anti-anabolic nature tends to decrease the total bone mass while the "N" hormone being anabolic in nature, in partnership with estrogenic and androgenic hormones, tends to neutralize this action. These endocrinological considerations serve as explanation for the beneficial effect of the combined sex hormone therapy in osteoporosis.[3]

Another important disability of the aged, more particularly the elderly females, is the fracture of the neck of the femur. A condition which prior to the development of modern surgical technics e.g., internal fixation and replacement prosthesis, was in the majority of cases fatal. Now that the lethality has all but been eliminated, these elderly patients are preserved to outlive their normal span of life. This fact may be responsible for the recent upsurge of interest in pathological fractures. After surgical correction these patients become candidates for rehabilitation and thereby the direct responsibility of the physical therapist. For this reason it is of practical importance to get acquainted with some of the related fundamental pathophysiological facts.

If, in the due course of normal healing, the patient develops sufficient callus to allow weight-bearing the therapist is only concerned with the technical execution of the rehabilitation program, a subject which is outside of the scope of this discussion. A mal or non-union, however, is not an infrequent occurrence. To understand more completely this complication it is essential to know some of the fundamental factors in operation.

The femoral neck and head receive their blood supply from various sources: medial and lateral circumflex arteries, a branch of the obturator artery through the round ligament, branches of the gluteal arteries, vessels from capsule, some supply from the nutrient vessels, and small arteries from the muscular attachments. In spite of this apparently rich supply, there is a section at the base of the head where circulation is exceedingly poor.

The angulation of the femoral neck and shaft in normal adults is around 140 degrees which, in the course of advancing years most probably due to osteoparotic weakening and under the influence of constant weight-bearing, decreases to 125 or less degrees creating a mechanical situation most conducive to the development of fractures in this area.

In examining the longitudinal section or the X-ray picture of the femoral neck and head a remarkable architectural structure can be identified. The trabeculae of the hip bone form a pattern which, not unlike the structure of a bridge, provides strength and elasticity without unnecessary weight. The intersection of the various trabeculae leave a space without any strengthening element. This site which is known as Ward's triangle represents an area of weakness and is a frequent site of fractures.

In addition to the above facts, which at least partly explain the fragility of the aging femoral neck, one should know about some of the factors responsible for the frequently observed delay in callus formation. Salner and Pendergrass[4] found the following to be responsible for such complications: a) aseptic necrosis of the head, b) displacement with faulty reduction, c) shearing forces of moving fragments, d) absorption of neck fragments, e) poor blood supply at the site of fracture, f) interposition of soft tissue. To this must be added "the absence of cambium layer in the fibrous covering of the neck which causes an absence of peripheral callus in the healing process after the fracture."

A knowledge of these factors and a great deal of other information are necessary to plan successfully for rehabilitation of the patient with a fractured hip.[5]

The peculiar gait pattern observed in some elderly people is often accepted as an inevitable manifestation of advanced age and little, if any, attention is paid to its correction. Sir William Gowers in 1890 had already recognized this condition as a clinical entity. His work stimulated some interest among the clinicians. It gradually developed that all gait disturbances, wrongly identified under the common technical term as "senile paraplegias", were by no means identical in nature. While most observers placed the

poorly identified "sclerotic" lesions in the brain or spinal cord, some observers, most prominently Lhermitte, identified one type which according to him is caused by fibrous changes in the peripheral musculature itself.[6] These muscles—as most of you have had an opportunity to observe—appear thin and wasted and feel characteristically hard when palpated.

According to Critchley,[7] one of the leading British neurologists, the site of pathology can be assumed to be in the cerebral cortex, subcortical area, spinal cord, or the muscles. The finer structure of these lesions is as dubious as their topographical localization. They are variously described as arteriosclerotic changes, degenerative lesions, localized fibrous changes, and in other equally equivocal terms. It is of clinical significance to remember that if a good history is taken, multiple small cerebrovascular accidents can be detected and may underlie some of the gait difficulties of seemingly obscure origin. In other cases a complete and unnecessarily prolonged bed rest after a simple stroke will be responsible for the bilateral gait involvement. Marks, in his recent studies in hemiplegia, with the aid of stroboscopes and forced plates found evidences of bilateral involvement in patients where the lesion was limited to one of the cerebral hemispheres only.

Present day lack of information concerning gait disturbances justifies further study of etiology and the productive mechanism. Those who are concerned with restoration of physical disabilities cannot afford to disregard certain crippling diseases simply because medical science has as yet not found adequate explanation for them. Clinically these patients vary a great deal. Their common characteristic is that they suffer from an interference in gait mechanism resulting in various degrees of incapacity.

Some of these patients begin their walking rather hesitantly and after a few steps attempt to hold on to anything within sight. Others do not stop but continue with peculiar rudimentary steps, hence the name—*Tastasie trepident*, after which they stop for a while only to repeat the same pattern. Where the lesion is localized in the muscles, as the French call it, *myosclerose retractilides des vielliards*, the gait is characteristically rigid.

The so called steppage gait, also known as *marche a petit pas*, is sometimes seen in diffuse cerebral lesions and is of diagnostic importance. Von Malaise suggested that some of the senile gait disturbances are due to lesions in the cerebellum. An excellent description of this condition was given by X. Edward Holyoke (1829) who at the age of 92 suffered from it himself.

One could go on indefinitely enumerating the variations of these disturbances. Due to the intricate interrelationship of the voluntary and involuntary gait mechanism, variations of pathological gait patterns are practically unlimited. It can only be said that the strange gait of the elderly person is not a mere clinical curiosity but a condition defined by little known physical, psychological and pathological factors. Many of these gaits can be corrected.[8] A fatalistic and pessimistic attitude towards these elderly patients is totally unjustified.

The foregoing fundamental pathophysiological facts have been discussed with the purpose of giving the scientifically trained physical therapist a somewhat deeper insight into the mechanism of some of the more common disabilities of the aging patient. This has been done in hope that the profession will continue to recognize its responsibilities and will extend its interest and offer services for a group of patients who are often direly neglected and whose only hope for recovery depends on the availability of highly skilled professional personnel.

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Laurie, Physical Therapist

This book, a romance for young moderns, written by Lois Hobart and published by Julian Messner, Inc., of New York, should be added to all lists of available material about the physical therapy profession. It will be reviewed in a future issue of the *Physical Therapy Review*.

This is the third in a series which Miss Hobart, editor and author, has written. Previous books are *Katie and Her Camera* and *A Palette for Ingrid*.

Solving the Problem of Self Care with Self-Help Devices

Erbert F. Cicenia, Ed.D., Joan Rosenthal, B.S., and Charlotte F. Springer, M.D.

Although many workers in Physical Rehabilitation have decried the use of mechanical assistive devices most have come to realize that the wisely selected device can be instrumental to the patient's independence.

Why has the value of self-help devices at last been recognized? An important reason is that many disabled persons because of the severity of their disability will never manage their daily activities unless they receive assistance either from a device or other persons. Those who have had first hand experience with patients' failure through substitution or compensatory patterns of movement but who have observed patients' success with the aid of a few simple devices, know how these help the patient to achieve some degree of independence.

More recently, with the increasing interest of physicians and other workers in the problems of the chronically ill and the aged disabled, there has been further recognition of the value of assistive devices. In teaching functional skills, therapists have had to resort to devices or gadgets to aid them in solving the problems presented by these patients whose functional capacities have deteriorated.

Evaluation

Too often devices are enthusiastically recommended for a patient before a thorough evaluation has been made to determine whether or not the patient can manage without them. The administration of a Daily Activity Test is not enough. A determined effort should be made to teach the patient to perform essential activities for daily living without mechanical devices. Special equipment should be used only after it has been established that the patient cannot learn to develop substitution patterns of movements to compensate for the loss of power or coordination necessary to perform in the normal manner.

In order for a special device to be practical, a patient must be able to set himself up without assistance. There are instances in which a patient is so severely involved that he can operate the device only after it has been set up for him. The rationale in these situations is that it is far better to be able to do part of the activity independently than to have to depend entirely upon an assistant. For morale this is undoubtedly important. But what may happen, and usually does unless proper measures are taken, is that the home or agency responsible for the post-hospital care of the patient may find it more expedient to feed or dress him (or whatever the activity may be) than to bother with setting up some special device. If a device is necessary to assist in achieving a degree of independence, it cannot be "worn in a closet" but must be accepted and used.

At the New York State Rehabilitation Hospital, the social case worker establishes contact with those responsible for the care of the patient after discharge from the hospital to determine if a special device can really help or if it will merely be viewed as a gadget to be shelved as soon as the novelty wears off. When necessary, those who are charged with the responsibility of caring for the patient are afforded the opportunity to visit the hospital to observe the patient and the therapist handling and operating the device.

Problems Solved by Devices

The use of devices will be explained in case presentations to show how devices met the particular needs of the several patients.

Case No. 1 is a 47 year old female. The patient was admitted to the Rehabilitation Hospital from a nursing home May 31, 1955, with a diagnosis of chronic rheumatoid arthritis. Symptoms appeared about 10 years before admission but she managed to keep working as a seamstress

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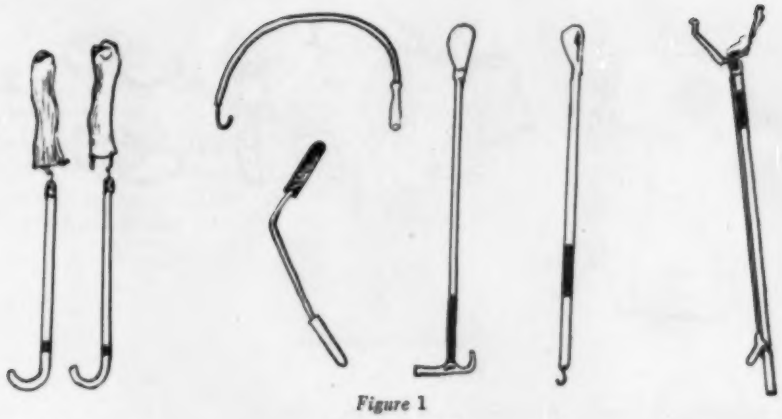


Figure 1

A. B. C. D. E. F.

A. Dressing hooks and socks adapted with corset garter and/or tape loops.

B. (above) Dressing device for putting on a brassiere and a blouse or a shirt with one arm; C. (below) Wiping device for cleansing after toileting.

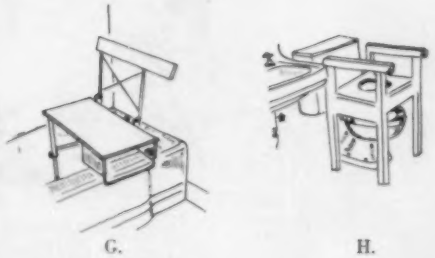
D. Utility rod with removable shoehorn. Rod was used to assist patient in getting from supine to sitting, sitting to standing and, with shoehorn detached, the rod served to hold and discard toilet paper after toileting. Hook on other end was used to zip up zippers on shoes, reach and hold objects which could be hooked, and to pick up objects from the floor.

E. Variation of utility rod with cup hook and detachable shoehorn.

F. Lightweight, aluminum grocery hook or Swedish griptong.

G. Shower board

H. Commode seat



G. H.

until about 6½ years ago, when most of the major joints of her body developed some degree of involvement. The patient had been hospitalized elsewhere for approximately 28 months and was treated with the conventional therapeutic measures. Until two years ago, she could perform all her daily activities independently. Prior to admission she had become totally bedridden.

On admission the patient's major problems were pain, marked limitation of motion, contractures in almost every joint of the body and obesity. She was able to use a call buzzer, come to a sitting position from the supine, and sit on the edge of the bed with considerable difficulty; other activities such as personal care and dressing, she was either unable to perform or required assistance. She could not come to the standing position unaided; however, once she was helped to the upright position, she was able to walk independently on a level surface with slow, short, shuffling steps. Due to the contractures at the knees and hips she stood as though in the "seated" position.

On admission her Rehabilitation Quotient (RQ)* was 3. Upon discharge four months later her RQ was raised to 44. Using several self-help devices and adaptive clothing she learned to dress and undress herself independently as well as perform other daily activities.

A special utility rod (Fig. 1D) was used to help her from the supine to the sitting position (Fig. 2A). The same rod helped the patient to get from the bed to standing (Fig. 2B).

Dressing hooks (Fig. 1A) were used to put on shoes and socks (Fig. 4A-B-C). The socks were adapted with corset garter loops and the shoes had leather heel loops and zippers (Fig. 1A and K1).

*The Rehabilitation Quotient or RQ is a score attained on a Daily Activity Test which indicates the percentage of daily activities essential for daily living that a person with a disability can perform independently.

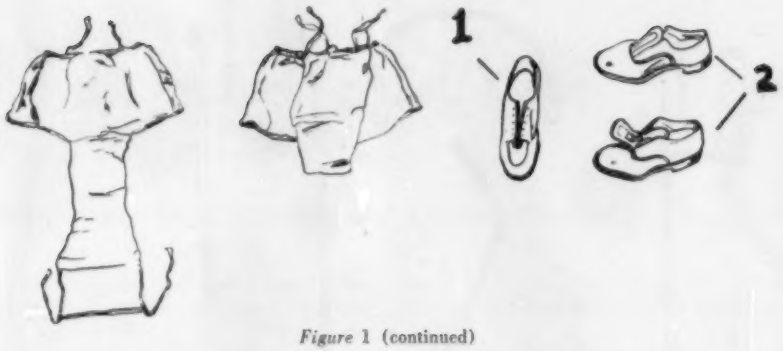


Figure 1 (continued)

I. J. K.

I. Adapted pants (open); J. Adapted pants (closed)
K. 1) Shoe adapted with zipper; 2) Shoe adapted with commercial shoe-loc by Talon.

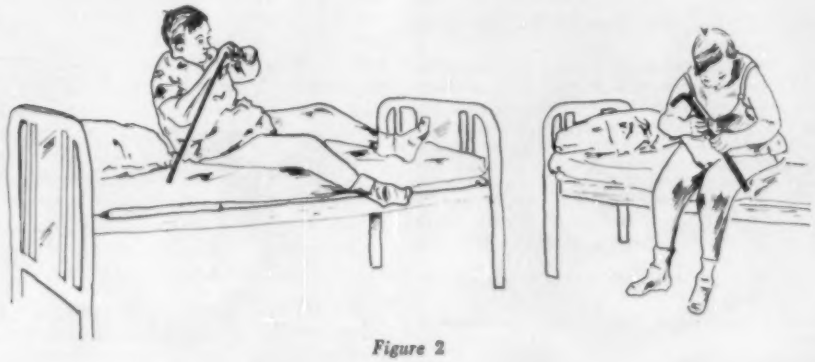


Figure 2

A. B.

A. Patient (Case 1) using special utility rod with shoehorn detached to assist her in getting from supine to sitting position.
B. Patient using same device to assist her in getting from sitting to erect position.

A wooden raised commode toilet seat with armrests (Fig. 1H) enabled the patient to get on and off the toilet independently. A special grab-bar for toilet use was recommended for her home.

The patient learned to put on underpants by adapting the underwear (Fig. 1J) to be put on overhead instead of in the conventional manner. Figs. 3D-E-F and G)

Cleansing after toileting was accomplished by adapting the special utility rod so as to hold and discard toilet paper.

The patient was provided with a specially designed wheel chair with seat and armrest height adjusted to facilitate getting down and up from the wheel chair to the erect position.

The patient was discharged to the home of her only living relative, a devoted nephew, who was willing to have her live with his family since she is completely independent and can assist with some minor household duties. She has not been placed in remunerative employment but an attempt will be made to seek home employment for her to utilize her skill as a seamstress.

Case No. 2 is a 40 year old male. The patient was admitted to the Rehabilitation Hospital on Apr. 18, 1955, from the home of his sister. The patient has been suffering from rheumatoid

A. Use of dressing hooks to put on sock adapted with loops.

B. Use of special utility rod (Fig. 1D) to bring sock over heel of foot.

C. Use of the same special utility rod to zip up zipper adapted with loop.

Figure 3

A. B. C.

D. E. F. G.

D., E., and F. Patient putting on adapted under pants (D. Put pants over the the head. E. Stand, grasp pant's tail with utility rod. F. Bring tail up under legs and fasten in front.)

G. Patient removing pants by pulling tail of the pants over head.

arthritis since the age of 16. He had multiple joint deformities, pain, and restricted motion.

The patient was able to walk with the aid of crutches until about three years ago, when most of this activity had to be restricted to his residential surroundings and during the past year further curtailment has been necessary. The patient was referred to the Rehabilitation Hospital because he was gradually becoming an intolerable burden to his sister and her family. He had reached the point of dependency which forced his sister to seek nursing home care for him.

When the patient was admitted he was unable to take care of toileting and other personal needs. Using full length axillary crutches he was able to walk laboriously and slowly on a level surface, if assisted to the standing position.

On admission his RQ was 61 and, when he was discharged after seven months his RQ was 76.

Bed blocks were used to raise the height of the bed to facilitate getting in and out of bed.

Dressing hooks permitted him to put on and take off pants (Figs. 4A-B), shorts, shoes, and socks. The socks were adapted with tape loops, and leather loops were sewed on the shoes.

The patient was provided with a specially adapted wheel chair to help him get to and from the seated position and standing (Fig. 4C) **. Getting on and off the toilet was solved with an individually prescribed commode seat.

To enable the patient to cleanse after toileting a specially developed simple wiping device (Fig. 1C) was provided for him.

With the aid of spring-top full length crutches (Fig. 4C1) the patient can ambulate over 1,500 feet using a swingthrough gait and can also per-

** The following wheel chair was recommended for the patient to meet his requirements for comfort and for function: Special, adult, outdoor model with 24 inch wheels and 8 inch casters; handrims; skirtguards; brakes; semi-reclining back with back of chair raised to 40 inches from the floor instead of the standard 36 inches; raised seat, 23 inches from the floor instead of the standard 19 inches; standard fixed arms with removable 3 inch blocks to give the front of the armrests a 32 inch height from the floor instead of the standard 29 inches; elevating legrests so designed that when the legrests are at a 45 degree angle the footboards will be 25 inches from the seat.

Figure 4

A. B. C.

A. Patient (Case 4) seated in wheel chair using dressing canes to put on socks adapted with loops.

B. Patient using dressing canes to put on slip-on type shoes adapted with a heel loop.

C. Special crutches and wheel chair with particular specifications to facilitate sitting down and getting up from the seated positions: 1) spring top crutches, 2) semireclining and raised back, 3) raised seat, 4) removable armrest block, 5) standard fixed armrests, 6) specially designed elevating legrests to accommodate contractures at knees and ankles.

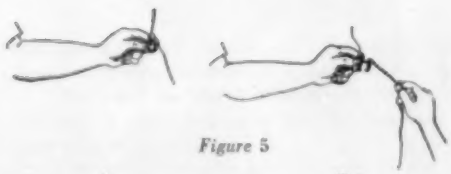


Figure 5

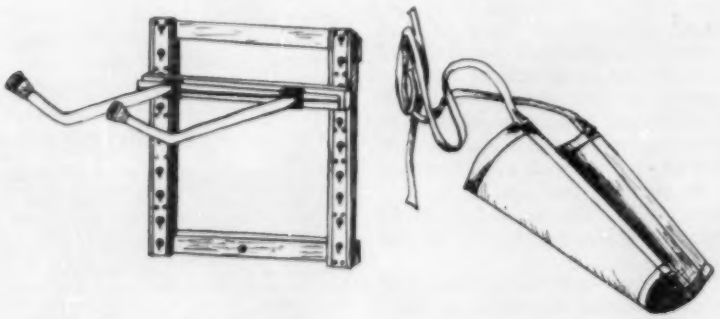
A. B.

A. Miniature navy pelican hook adapted for dressing activities (closed).

B. The hook opened for release.

C. Special wall apparatus to aid patient with flail upper extremity in dressing.

D. Stocking aid from King's College Hospital, London.



C. D.

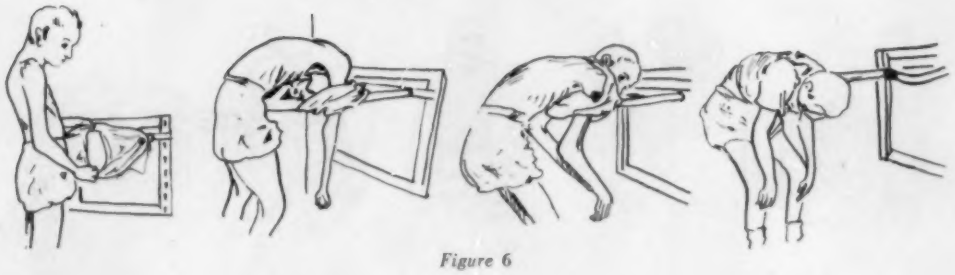
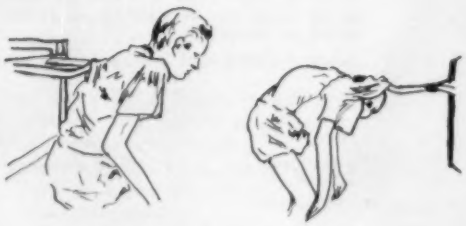


Figure 6

A. B. C. D.

A. through D. Patient with essentially flail upper extremities using wall dressing device to put on T-shirt (A. Accordion T-Shirt, place sleeve arm openings on wall device, and spread apart opening for head. B. Slip arms through sleeve openings and place head into neck opening. C. and D. Using the arms of the dressing device, gradually pull on the shirt.)

E. and F. Patient removing T-shirt: E. Engage T-shirt on arm of dressing device. F. Maneuver so that T-shirt can be pulled off by walking away from the device.



E. F.

form minor elevations (6 inch curb and low steps with handrail).

He learned beading and leather work and his work tolerance is such that the State Division of Vocational Rehabilitation has been contacted with a view of possibly placing him with a manufacturer of moccasins in his home town. The patient has also learned to get into and out of a car which may permit employment outside of the home. The patient believes he can arrange for transportation by the taxi service in town if he is to work at a factory.

Case No. 3 is a 24 year old male. The patient developed poliomyelitis late in August, 1955. He was admitted from a general hospital where he had depended upon a respirator until Sept. 26, 1955. His neuromuscular picture at time of admission to the Rehabilitation Hospital was one of fairly extensive trunk and upper extremity involvement, particularly the right upper extremity, and with some return of function in the lower extremities.

The patient's disabilities are: deafness, a residual of whooping cough at the age of two, which has left him without speech; flail right upper extremity; extensively weakened left upper extremity; and weak but functional lower extremities.

When the patient was admitted he was unable to come to a sitting position in bed. He was completely dependent in all dressing and self-care activities. The patient was able to rise from the seated to the standing position with some difficulty and occasionally required minimal assistance. He had a normal gait pattern and used no appliances, but his endurance was poor.

His RQ on admission was 55 and when he was discharged after 10 months of therapy, including an operation for opponens reinforcement, his RQ was 93. By utilizing a special wall piece of apparatus (Fig. 5C) and adaptive clothing he successfully mastered all his dressing and self-care activities, including toileting. Figures 6 and 7 illustrate how the device is used to put on and take off a T-shirt and a sport shirt with long sleeves†. Trousers and shorts did not present an insurmountable problem to the patient because of his functional lower extremities and excellent balance. He elected to wear slip-on type shoes

† Patient was able to manage buttons, except that he had difficulty with the left cuff button because of the flail right upper extremity and hand. The cuff was easily modified with a strip of elastic sewed to the cuff which permits the hand to slip through.

Figure 7

A. B. C. D. E.

A. through D. Patient with essentially flail upper extremities using wall device to put on sport shirt with long sleeves (A. Place shirt on arms of dressing device with sleeve openings exposed. B. Place either arm into the sleeve. C. Maneuver in position so that the other arm can be placed into the other sleeve. D. Use the arms of the device and change body positions to pull on the shirt.)

E. Patient removing shirt (sequence is the reverse of putting on shirt).

F. G.

F. and G. Patient with weak abdominals using leg power to assist him in coming from the supine position to the sitting position.

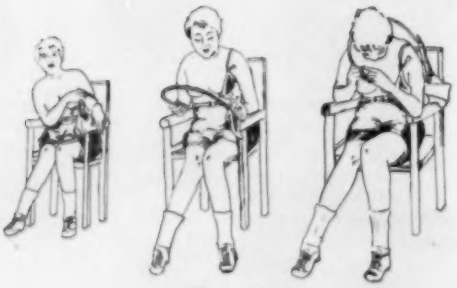
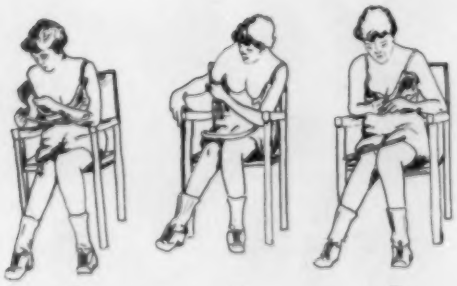


Figure 8

A. B. C.



D. E. F.

Patient (Case 4) using special device to put on brassiere.

A. Place brassiere strap over affected arm.

B. Hook other strap into the device.

C. Carry brassiere over head and around the back.

D. Grasp brassiere with affected hand and hold.

E. Place unaffected arm through strap.

F. Fasten and adjust brassiere.

rather than have to contend with shoelaces, zippers, or other modifications.

His only other problem, rising from supine to sitting, was accomplished by a substitution pattern of movement utilizing what little power he could muster in his upper extremities. Figures 7F-G illustrate the method used.

Case No. 4 is a 27 year old female who contracted poliomyelitis on Sept. 12, 1954. After receiving the conventional therapeutic measures for the treatment of poliomyelitis she was transferred on Nov. 9, 1954 from a general hospital to the Rehabilitation Hospital for continued therapy and rehabilitation.

The patient has extensive involvement of the trunk and all four extremities. On admission her RQ was 16 and she was classified "Custodial" with a potential for remaining the same. When

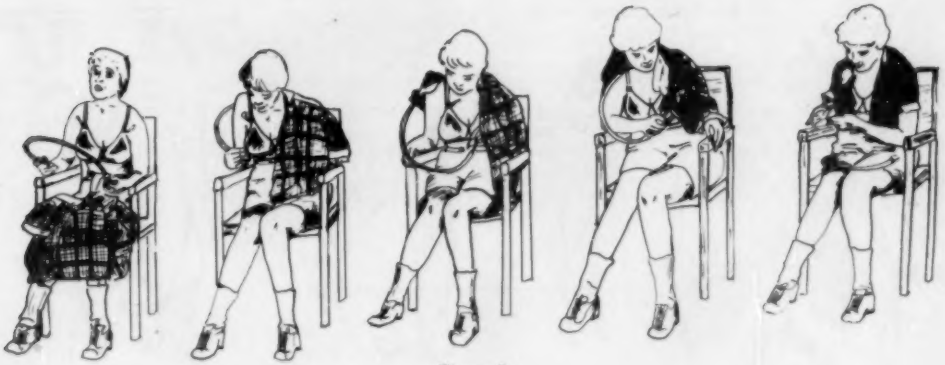


Figure 9

A. B. C. D. E.

Patient using special device to put on a blouse. A. Hook device through button hole on collar.
B. and C. Carry the device over head and gradually work the blouse over the shoulders.
D. Place the sleeve over the affected arm and adjust the blouse on the shoulder.
E. Place unaffected arm through the other sleeve and adjust blouse in proper position.

she was discharged Nov. 4, 1955, her RQ was 49. Because she remained dependent in many of her essential personal care activities she retained the classification "Custodial." The patient, however, did manage to learn some dressing activities with dressing hooks, and a special device (Fig. 1B) was used to put on and take off a brassiere and blouse. Figures 8 and 9 illustrate the use of the device in putting on a brassiere and blouse.

Case No. 5 is a 42 year old male. The patient has a history of bulbospinal poliomyelitis dating from September, 1954. Residual paralysis is severe in the upper extremities (most marked on the right) and the muscles of the neck. He has good lower extremities with mild involvement in the right calf.

When the patient was admitted to the Rehabilitation Hospital Jan. 17, 1955, he was fully ambulant without any apparatus. The patient was dependent on help in all dressing, grooming, and feeding activities. With the aid of several devices he can now do practically all dressing activities. The use of one of these devices is illustrated in figure 10. He is also able to perform all grooming and feeding activities without aids of any kind. He is able to write quite well with the left hand and he can handle the telephone.

Case No. 6 is a 57 year old female. The patient has a 36 year history of rheumatoid arthritis. She has severe limitations of range of

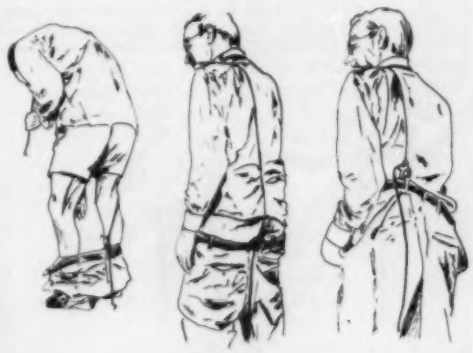


Figure 10

A. B. C.

Patient (Case 5) using a device (Figs. 5-A. and B.) patterned after a nautical apparatus called a pelican hook to put on pants and jacket.

A. Fasten pelican hook into rear belt loop and bring cord over shoulder.

B. Using the teeth to assist the weak arm, pull pants up to the hips where they can be grasped by the hands.

C. Pull pants over hips, adjust in proper position.

Note: Pelican hook is released by pulling the free dangling cord which opens the jaws of the hook in the manner of icetongs.

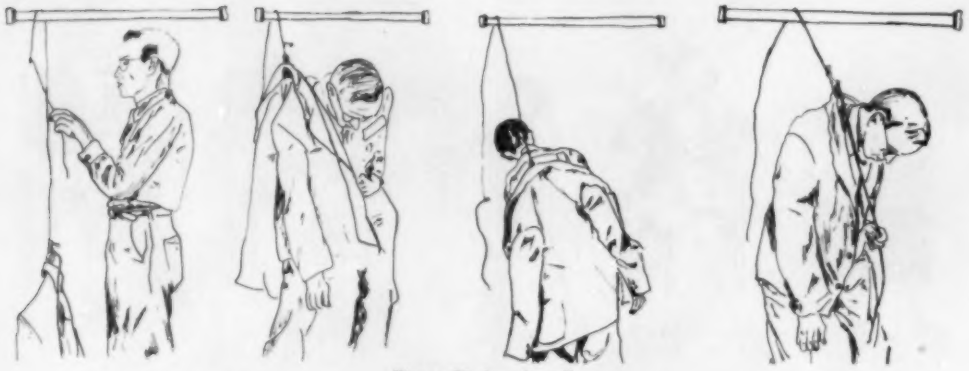


Figure 10 (continued)

D. E. F. G.

D. Place pelican hook on coat loop. Note: Cord is prearranged over the doorway bar and remains in this position as a permanent fixture. Knots in the cord prevent it from slipping off the bar when not in use. Pull jacket to appropriate height and place arm in sleeve. The cord is locked on a cup hook or other device when the desired height has been reached.

E. Continue pulling the jacket until arm is in sleeve and jacket is over the shoulder.

F. Place other arm in sleeve and adjust coat.

G. Pull release cord to open pelican hook. Note: This patient adapted the arrangement illustrated in the drawing to his office where he used a coat tree in place of the over head gym bar. The patient wanted to be independent at work and did not wish to be compelled to ask someone to help him with his jacket or outer coat.

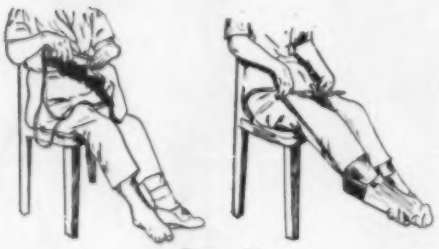


Figure 11

A. B.

Patient (Case 7) using special device to put on sock.
A. Place sock over device. B. Holding the straps, place foot into sock opening and work sock onto foot. When sock is completely on continue pulling on straps and remove device.

motion at shoulders, elbows, wrist, fingers, hips, knees, ankles, and neck. Through compensatory training the patient has learned to manage all dressing and self-care activities except putting on shoes, socks, and stockings. The shoe problem was solved with loops on the shoes, zippers, and dressing canes. A special device (Fig. 5D) fabricated with exposed X-ray film was used to help her put on socks and stockings.

SUMMARY

The necessity and justification for the use of adaptive equipment or self-help devices have been briefly discussed. It is essential that all methods of performing daily living activities by compensatory or substitution patterns of movement be ruled out as nonfeasible or impossible before devices are recommended. It is important to make sure that the patient have the opportunity to continue to use devices recommended for him after discharge from the hospital or rehabilitation center. Once functional training is completed those responsible for the patient's care must be instructed in the usefulness of the adaptive equipment to permit the patient to be independent in essential self-care activities.

Six cases with different types of functional training problems have been described and the various devices employed for their improvement of self sufficiency have been discussed and illustrated.

The authors wish to express appreciation to Edward Schlesinger, M.D., Associate Director for Medical Services, New York State Department of Health, for his suggestions of an editorial nature and to Miss Frances Bauer for assistance in the preparation of the paper.

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Suggested Salary Ranges for Qualified Physical Therapists

Physical therapy is a medical service administered by physical therapists upon written prescription of the physician. Specific professional preparation is required to enable physical therapists to carry out the treatment procedures, tests, and measurements as prescribed.

In recognition of this fact, the Council on Medical Education and Hospitals of the American Medical Association has established educational standards for schools of physical therapy and approves those schools which meet the stated standards.

Therefore, a qualified physical therapist is a person who since 1936 has been graduated from a curriculum approved by the Council on Medical Education and Hospitals of the American Medical Association or was graduated prior to 1936 from a school or course approved by the American Physical Therapy Association or is a member of the American Physical Therapy Association or registrant of the American Registry of Physical Therapists. Physical therapists must comply with State laws regarding licensure or registration.

The American Physical Therapy Association recognizes a responsibility to the profession and to the employers of physical therapists to be concerned with personnel policies affecting the practice of physical therapy. In 1956, the Association conducted a nationwide study of personnel policies among its members. The results of this study have been analyzed by the Board of Directors and Advisory Committee for the Department of Professional Services of the American Physical Therapy Association. It was agreed that salary ranges should be commensurate with responsibilities of the position. They should reflect the duties required as well as the personal and professional qualifications requisite to adequate performance in each classification.

A staffing pattern should be dependent upon numbers of patients being served by the department, the complexity of the service, and the use of the service as a teaching facility for students. For example—

1. A large physical therapy service may have several specialized units within a medical center requiring a senior and/or chief physical therapist with delegated responsibilities in each unit. An over-all director or coordinator would integrate the entire service.
2. A new physical therapy service would require the skills of a physical therapist with experience in developing the service and establishing effective interrelationships in the facility and the community.

CLASSIFICATION OR TITLE AND SALARY RANGE

Based on a 40-hour week, the following suggestions are made.

I. Staff

$3,750.00 to $4,750.00

A staff physical therapist is responsible for patient care as prescribed by the physician and functions under the supervision of a senior physical therapist.

II. Senior Staff

$4,250.00 to $5,250.00

A senior physical therapist is responsible for patient care as prescribed by the physician and for the supervision of other staff.

Five steps within these salary ranges in Classifications I and II can be planned to provide for periodic increments, to permit adjustments upward at other than the first step in the respective range when employing staff with experience, or to promote individuals to a higher step when they have demonstrated ability.

III. Chief
$5,000.00 — No Ceiling
A chief physical therapist supervises the performances of one or more staff physical therapists and has administrative duties in addition to direct patient care.

IV. Director or Coordinator of Physical Therapy Services
$6,000.00 — No Ceiling
A director or coordinator is one who integrates the services of the physical therapy department and may be jointly responsible with a physician for employing and dismissing personnel, budget planning, ordering equipment, teaching, and serving as liaison with other departments in the institution.

The beginning salary in Classification III and IV would be dependent upon applicant's experience. Periodic increments might be established on the basis of a percentage of the beginning salary.

The American Physical Therapy Association supports the principle of stated personnel policies including salary ranges. Also, it recognizes the desirability of regional and local personnel policies which are flexible and have been established cooperatively by a decision of employers and representatives of the profession.

Case Report

Good Recovery Following Fracture and Displacement of the Odontoid

Hazelle Erickson, B.S.

A 25 year old male student at the University of Minnesota was injured on July 29, 1951, when he dived into a lake and struck his head on the bottom. He came to the surface floating face downward and was towed to shore, where artificial respiration was applied.

At initial examination in a hospital all reflexes were found to be absent, and there was complete sensory loss, except for areas of the face and chest. No evident motion could be found below the neck. X rays revealed a fracture of the odontoid with displacement of C-1 and C-2.

Within three days after the accident there was involuntary movement of the legs, but no voluntary motion. Sensation was definite at T-8 on the left side and T-3 on the right side. There were trace signs of motor reaction in both quadriceps. At this time, the patient was placed on a Foster Frame and crutchfield tongs applied. Two months later, on Sept. 30, 1951, the tongs were removed and a Thomas collar was applied. Throughout hospitalization, urinary tract infections and muscle spasm were a problem. Muscle relaxant drugs failed to control the latter.

Coordinator of Therapies, University of Minnesota Hospitals.

Physical therapy started three days after the accident, and consisted of passive range of motion of all extremities and muscle reeducation. Sensation was present in varying degrees over the entire trunk and all extremities. It was noted that only the right great toe and the left thumb showed voluntary motion. The quadriceps which had responded slightly the day following the accident no longer showed voluntary motion. Within a few days, motion began to return to the lower extremities in hip abduction and knee flexion. As more voluntary motion returned, passive range of motion was replaced by active assistive, then active and resistive exercises. Muscle reeducation was continued throughout the treatment program but was hampered by the muscle spasm, particularly in the lower extremities.

Oct. 1, 1951, 2 months after injury, the patient was placed on a conventional hospital bed. An overhead apparatus was set up to facilitate the exercise program and to enable him to move about in bed. A comprehensive program of exercise for sitting and standing balance, coordination, endurance, and development of strength of all involved muscles was instituted which proceeded slowly, but steadily. The patient was hindered by incoordination and spasm but worked hard and, within three months after injury, was able to be brought to the Physical Therapy Department for treatment. He was able at this time to walk several lengths of the parallel bars and soon progressed to use of Canadian crutches. Occupational therapy was added to the program to increase finger dexterity and coordination.

In the clinic, the patient developed an eagerness to work to the point where he strained muscles of

the leg and hip. At a later date he twisted an ankle and fractured the left tibia. This curtailed walking, but all other exercises continued. Mar. 8, 1952, the cast was removed and whirlpool, massage, and gait training again became a part of his treatment. After this, improvement was steady and on May 29, 1952, 10 months after admission, he was discharged from the hospital. The patient continued to come to the Physical Therapy Department for outpatient follow-up until school began in the fall. He returned to his regular school duties, using a cane when walking to and from classes.

The patient had a final physical examination on Dec. 14, 1955, 4½ years following the injury. This examination revealed tightness in knee flexion, hip rotation, all shoulder and neck motions, and straight leg raising to 120 degrees on both right and left.

Generally, all muscles showed improvement; reflexes were hyperactive throughout (grade 4) and an unsustained clonus of both gastrocnemi was present. Light touch and sensitivity to pin prick were intact over the trunk and all extremities, but proprioception and stereognosis impaired the use of both hands, especially in coordinated activities where the patient could not watch his fingers. His gait, because of spasticity, was jerky and slightly ataxic, but quite good, and a cane was not needed.

The following chart will show the increases made in selected muscles over the four year period:

	Left			Right		
	Sept. 1951	Aug. 1953	Dec. 1955	Sept. 1951	Aug. 1953	Dec. 1955
Gluteus Maximus	2+	4−	4	2−	4	4
Quadriceps	4	4+	5	3	4+	4+
Gastrocnemius	2	4	5	4	4+	5
Tibialis Anticus	2	4	4	1	2	4
Peroneals	2	4	5	1+	2	4
Deltoid	1	5	5	1	4	4
Trapezius	3+	4	5	3+	4	5−
Latissimus dorsi	1?	5	5	1?	4	5
Biceps & Triceps	2+	5	5	2+	4	5
Wrist Flexors & Extensors	1	4	4+	1+	4	4
Opponons pollicus	2	3	4	1	2	3

The patient was discharged with instructions to continue stretching exercises to maintain normal range of motion. He has since returned to his native Egypt where he has carried out his plans of becoming a teacher and advisor in economics.

Professional Test

Most of our anatomical terminology had its origin at a time when knowledge of the function of the structure was, for the most part, unknown. As a consequence, anatomical structures were named on the basis of their resemblance to some familiar article of everyday life.

To early anatomists, the following item or article suggested an anatomical structure. Can you name it? Answers, along with the Latin or Greek derivations, will be found on page 749.

1. Vinegar cup.
2. A brooch or clasp.
3. Spoke of a wheel.
4. Key or bolt, especially in the sense of a door-opener or door fastener.
5. A pipe or flute.
6. A trowel or spade.
7. Little plate or pan.
8. A basin.
9. Protector of the elbow.
10. Wall or partition.
11. A sieve.
12. Little hammer.
13. Raven.
14. Cuckoo.
15. Tooth.
16. A hilt or handle.
17. A wedge.

Suggestions from the Field

Hand Treatment Table

Gudrun Tandberg, B.S.

Figure 1 shows a hand treatment table viewed from above. The end on right shows an affixed supination and pronation handle with a set-screw resistance mechanism seen in figure 2. It is adjustable for height (see fig. 2). The end on left shows a diagram of 4 pull-out treatment boards. The 2 boards below, 23⅜" x 12" x ⅝", pull out in the same direction while the two notched boards above, 21½" x 15" x ⅝", overlap allowing them to be pulled out at opposite sides of the hand treatment table. The holes through the table top are designed for resistive finger pulley exercises. Pulleys are attached on the under side and fingers are fitted into leather ring bands. This table can accommodate 4 patients working on the pull-out boards and another patient using the supination-pronation mechanism at one time.

Director of Physical Therapy, King County Hospital System, Seattle, Washington.

This is the third of several innovations in physical therapy equipment from the King County Hospital System, Seattle, which will be described by Miss Tandberg.

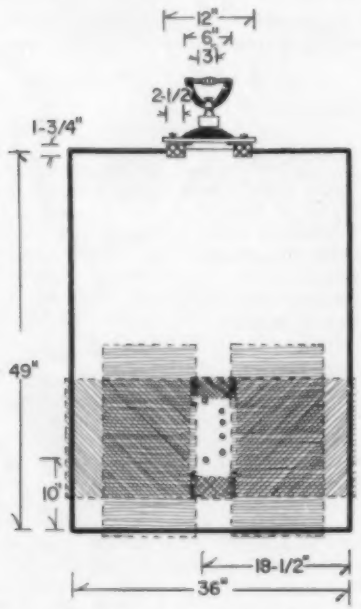

Figure 1. Plan for hand treatment table. Shaded areas are pull-out boards.

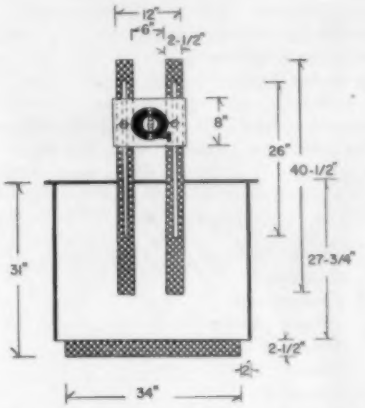

Figure 2. End elevation of hand treatment table.

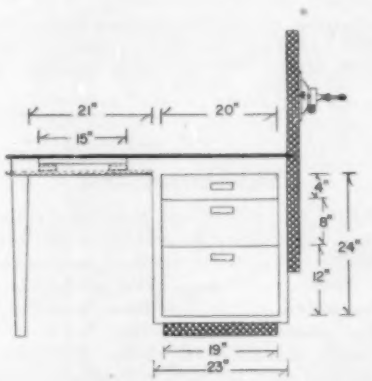

Figure 3. Side elevation. Dotted areas are pull-out boards.

Figure 2 shows the supination-pronation mechanism viewed from the end. It shows the

Figure 4. Completed table in use.

slots allowing two bolts and nuts to adjust the handle at the desired height.

Figure 3 is a side view showing on the right a series of 3 storage drawers of varying depths and also a diagram of a pull-out board. The other side is identical except for a storage space, 26¼" x 21½" x 16" inside measurements, with a shelf in the middle and one door opposite the drawers.

The author wishes to express appreciation to these members of the King County Hospital Staff—to Miss Marylou Ingram for her help with the drawing of the illustrations, and to Mrs. Pearl Rohr for her assistance with the taking of the photographs.

New Publication on Neurological Disability

More than ten million people in the United States are now suffering from nerve ailments, it was disclosed by Basil O'Connor, president of the National Health Council, in announcing publication of a new National Health Council volume, *Ten Million and One, Neurological Disability as a National Problem.*

More than 300 causes of nerve weaknesses are listed in the book, Mr. O'Connor said.

"The causes of neurological disability include poliomyelitis, cerebral palsy, multiple sclerosis, Parkinson's disease (shaking palsy), epilepsy, stroke, and accidents," he remarked.

Mr. O'Connor pointed out that although the problems of neurological disabilities are being attacked by separate organizations in the health field, they have not been and do not have to be considered piecemeal. A broad view of the problem on a national scale is being taken, he said.

Seventy experts in the field of nervous diseases and problems of rehabilitation are listed as authors of *Ten Million and One.* The authors presented their views at a special conference held under auspices of the National Health Council to discuss neurological disability as a national problem.

Dr. Leona Baumgartner, New York City Health Commissioner and past president (1956-57) of the National Health Council, wrote the preface to the new book. She noted that "neurological disabilities make a large claim on community health and welfare resources. They are costly in dollars and in heartaches.

"It is easy to understand the feeling of helpless frustration that the victims of neurological disorders, their relatives and friends, and even those professionally responsible for their care, sometimes suffer," she continued.

"The truly anguished cries sometimes arise: Why can't we do something about this? What can we do? Who can help us? This book is one

(*continued on page* 764)

Hospital Accreditation*

Kenneth B. Babcock, M.D.

History

The history of medical education is fascinating reading. I am not speaking of ancient history, but American medical history of forty-five years ago. In 1910 under the auspices of the Carnegie Foundation, Dr. Abraham Flexnor gave his famous report of the medical schools of the United States. New York had a dozen. Cities like Detroit and Cleveland had four or five. Very few were classified as good; the best you could say of most of them was that they were diploma mills. With effort, sacrifice, hard knocks, the corrections were made and as of 1953 there was no so-called second-class medical school in the United States.

In 1919 under the leadership of Dr. Franklin Martin, minimal standards for hospitals were conceived and shortly afterward, Dr. Malcolm T. MacEachern took over the program of the American College of Surgeons for surgical standardization of hospitals. This program raised the level of patient and hospital care inestimably in the United States and Canada in the last quarter century. It was a wonderful program, but was too expensive an undertaking for the College alone.

The American College of Surgeons spent over two million dollars alone on this program and after some backing and filling by the different interested medical organizations the concept of the Joint Commission on Accreditation of Hospitals was born. It did not really begin its function until well into 1952 under the able leadership of Dr. Edwin L. Crosby, now Director of the American Hospital Association.

The Joint Commission on Accreditation of Hospitals is the child of five great medical and hospital organizations, the American College of Physicians, the American College of Surgeons, the American Hospital Association, the American Medical Association, and the Canadian Medical Association.

Purpose

It is an independent, voluntary, non-profit corporation organized to render a public service; its main purpose is to improve the quality of care rendered to patients in hospitals. Its method of achieving this goal is to establish minimum standards of quality of patient care and then invite all hospitals and physicians who offer care to the sick to meet or surpass those standards by improving their services and their facilities.

Philosophy

The basic philosophy is that a better job can be done by the Commission pooling the interests of the five-member medical and hospital organizations in their common desire and goal to improve patient and hospital care than by going it each alone. This has shown itself in two notable instances over the old standards of minimum care as promulgated by the American College of Surgeons. The improvements are—

1. Patient care of all the ill—not just surgical cases.

2. The stressing of the human factor rather than brick and mortar. The finest facilities mean nothing unless there is quality care from a humane, interested, responsible medical, nursing and hospital staff.

Eligibility Requirements for Accreditation

The structure, organization and facilities of a hospital determine its acceptability for accreditation. Any institution which is listed in the Administrator's Guide of the American Hospital Association, has twenty-five or more beds and has been in operation for at least one year is eligible for survey. Eligibility extends not only to the typical non-profit, voluntary hospital operated by a religious, educational or other philanthropic organization, but to proprietary hospitals operated as private corporations and federal, state, county, township and city hospitals, general or specialized in facilities offered.

Thus, nearly 4,000 hospitals in the United States are eligible. Approximately 3,000 of these have met minimum standards for accreditation and obtained certificates attesting to this fact.

General Standards

All standards for accreditation are based on what time and experience have shown to be the best means of assuring proper care of the hospital patients. These requirements include:

1. A physical plant and administration providing x-ray, laboratory, and other facilities for the adequate nursing care, feeding and housing of patients, with proper protection from fire, explosion and other hazards.

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* Presented at the 86th Annual Session, Colorado State Medical Society, Estes Park, Sept. 7, 1956. The author is Director, Joint Commission on Accreditation of Hospitals.
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2. Restriction of the hospital's medical staff to physicians and surgeons who are graduates of approved medical schools, legally licensed, competent in their fields and ethical in conduct.

3. Maintenance of complete medical records on each patient, so that not only the doctor but all concerned in the present or future may know what was found and what was done.

4. A well-organized staff of physicians permitted to practice in the hospital according to written rules and regulations subject to the ultimate authority of the hospital governing board.

5. Medical supervision of the staff to assure that each member is restricted to what he is competent to do, and to enable each member individually and all collectively to increase diagnostic accuracy and good results of treatment.

The field representative reports his findings and makes a recommendation to the director of the Joint Commission who in turn reports to the Board of Commissioners. The Board then votes to accredit, provisionally accredit, or nonaccredit the hospital. The Commission subsequently notifies the hospital by letter of its action. These are the essentials of and for a first-class hospital, the wisdom to date from years of scientific progress in medical care.

Procedure

A good survey must be as objective as possible and to this end the American College of Surgeons shortly after World War II adopted the "Point Rating System" as a tool to help them in evaluating hospitals. In this system a numerical value or score is assigned to every facility and category examined. Previously, it had been done in narrative form, but it was felt that a more uniform report could be accomplished by the assignment of values. The Joint Commission on Accreditation of Hospitals has modified it somewhat, but is still using this system. It is far from perfect, but still the best means at hand and undergoing constant correction as the picture changes.

Scoring Reports

Briefly, the scoring report itself is divided into eight essential divisions and eight complementary divisions. Every hospital, big or little, must be surveyed on the essential division and scored. The complementary divisions are likewise scored if present, but a hospital is not given demerits if it does not have one of these divisions. For example, a hospital with an obstetrical division is surveyed and scored and the scoring made part of the total evaluation, but if there were no such division, no points would be subtracted.

Essential Divisions

Briefly, the first two portions of the essential scoring report take into consideration the actual physical plant and the administration of the hospital plant per se. Such things as the state of maintenance, adequacy of fire protection, segregation of patients, type of government and governing board, training and adequacy of the administrator, personnel policies, sanitation aspects, evidence of patient overcrowding are all surveyed and evaluated.

The third essential division is that of medical staff organization. It is here particularly that one frequently finds many deficiencies and it might be said that a well organized hospital is a happy hospital. The surveyors look for such things as are all the physicians qualified to perform the privileges assigned to them? Does the hospital have bylaws, rules and regulations protecting the patient, the physician and the hospital itself? Almost every legal case resulting in an adverse decision against a hospital is caused by poor bylaws not properly adopted by the staff and governing board. In a hospital organizational setup there must be provision for medical staff and departmental meetings that will thoroughly review and analyze the clinical work performed in that hospital.

Medical records are the fourth essential division. Considerable emphasis, as it should be, is placed on the maintenance of good medical records. Over one-eighth of all scoring points are placed here alone. This may seem excessive until one considers that good medical records not only contribute to the professional care of patients but also reflect in general the quality of professional care that is given in the hospital. The relatively large number of points assigned is a recognition of both aspects. The modern practice of medicine, with its emphasis on treating the whole patient, brings into play the skills of a variety of medical specialists and trained medical assistants. Proper management of the care of the patient by the attending physician requires prompt recording in the medical record by each member of the team. The number of consultants and assistants may vary widely, depending upon the nature of the patient's illness, but today all hospital episodes except the most minor require the services and the recording of their findings of several different members of the hospital staff. It has been well said the material in this department is strong evidence of

the standard of service to the patient, is an insight to the keenness of the medical staff in practicing scientific medicine and should contain information for research and training.

Essentials five and six cover the departments of x-ray and laboratory. Every accredited hospital must have these departments. The extent to which these services are carried out depends on the type and size of the hospital. Where total facilities are not available, satisfactory outside arrangements must be made. Smaller hospitals unable to hire a full-time pathologist or radiologist should avail themselves of part-time services from these individuals. Good modern medicine cannot be practiced without up-to-date adequate laboratory and radiological facilities—they are a must.

The final two essential services are those of the nursing and dietary departments. Good nursing care and adequate dietary facilities mean a great deal to the patient and to the hospital. It is rather unjust, but a great many people and patients judge the caliber of a hospital by its nursing service and whether it serves palatable hot food. The finest quality care given to patients by an excellent medical staff can go for naught when food is poor and nursing care is slovenly. Public relationwise, they are important adjuncts of quality care.

Complementary Divisions

The Complementary Service Divisions break down into departments. They are the departments of Medicine, Surgery, Obstetrics, Anesthesia, Physical Medicine, Outpatient, Medical Service, and Pharmacy. If a hospital has them they, too, are judged for organization, proper records and good maintenance. Questions pertaining to death ratios, number of consultations, number of infections, etc., are asked. Any question pertinent to good care may be asked of the chief of the department or the administrator of a hospital.

Objective Examination of a Hospital

Hospital accreditation is not brick and mortar and stainless steel—it is the goal of people living up to their responsibilities, their rules, keeping good records and constantly reviewing everything to improve quality.

The Joint Commission on Accreditation of Hospitals is a powerful medical watchdog that maintains a constant guard over the hospital patient. When a hospital is Fully Accredited it seems it has complied with at least three-fourths of the Commission's rigid requirements for patient service and is striving, we hope, toward the mythical 100 per cent perfection. This is fine, you all say, and a very creditable goal. The surveying of a hospital necessitates that we use only objective criteria. This is fine also, you nod. First we think of the administrator—ten to fifteen years' experience, graduate of school of hospital administration, knows his work—check him off.

Fire hazards—oh, yes, extinguishers all over the place, fire doors, enclosed hoses, even a fire evacuation plan in this drawer right here gathering dust.

Dietary—all O.K., latest in hot carts, very advanced, electric toaster and coffee to patients, biggest advance in twenty years. Feeling smug and complacent now, I must tell you that such is necessary, but it all adds up to less than one-fourth of the entire grading.

The other three-fourths of the grading is an objective grading of your medical staff—your doctors—your own ultimate responsibility for the quality of patient care in the hospital. This is a different story and usually starts off with an emotional outburst from the outraged physician and his equally outraged friend, Mr. Board of Trustees member. How can any surveyor or inspector sent out from the ivory towers in Chicago evaluate me and the quality of care I give to my patients? Bureaucracy, loss of physician's individualism, interference with patient-physician relationship! Did the surveyor see me operate or treat my patient? Did he examine my patient?

The answer, of course, to this is no, he did not. No surveyor ever goes into an operating room and watches the surgeon operate; no surveyor ever lays a hand on a doctor's patient. How is it done? How can we evaluate a medical staff? Yes, and the board and administrator, too? That is what I propose to tell you briefly today. The surveyor has visited the hospital, inspected the facilities and asks to see from one to four people, namely, administrator, pathologist, chairman of tissue committee and medical record librarian. He asks them to produce the following statistics: Hospital death rate, anesthetic, maternal and infant death rates, number of or rate of cesarean sections, sterilizations, infections and consultations. Has your hospital those statistics available; can they be entirely justified; if not justifiable by your medical audit, record or tissue committee, what steps are being taken to correct and avoid them?

SUMMARY

The following points should be kept in mind

by every physician and hospital administrator or trustees regarding Hospital Accreditation:

1. Hospital accreditation is a doctor's program. Standards have been set by the doctors. The Joint Commission is controlled by practicing physicians and a large portion of the finances which are spent in this program comes out of doctors' pocketbooks.

2. Hospital Accreditation started out with, and still has, the unqualified support of the governing groups of its professional medical sponsoring bodies (American Medical Association, American College of Surgeons, American College of Physicians, and the Canadian Medical Association).

3. Hospital Accreditation is one of the finest voluntary movements ever carried on by the physicians of the United States and Canada to assure the public of safe standards. In this very program they have found their greatest public relations tool.

4. The Hospital Accreditation program will end the day that organized medicine gives the word.

5. Hospital Accreditation is not involved in many side issues such as the discussions between the specialist and the general practitioner or the economic discussions of certain physician-hospital relationships.

6. Hospital Accreditation does not take additional time on the part of the physicians on the hospital staff and this fact should be recognized.

7. Hospital Accreditation involves more clerical work than has been needed before, and therefore, hospital administrators and trustees should make provision for additional help.

8. Every hospital must accept and understand the over-all philosophies and objectives of Hospital Accreditation before it starts worrying about the details.

9. No Provisionally Accredited or Non-Accredited hospital can face the citizens of its community with a clear conscience. In my opinion the present minimum standards of Hospital Accreditation will be raised over the years, and the time will come when higher standards will be demanded.

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DERMATOLOGY

Electron Microscopic Study of the Effect of Prolonged

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Editorial

The Physical Therapist in the School

Boards of Education have become increasingly interested in providing physical therapy service to meet the needs of children with physical handicaps. More and more physical therapists are being employed in schools, not only in metropolitan centers and orthopedic units which are an integral part of a community school, but smaller school districts are jointly sponsoring and sharing this service.

The physical therapist who leaves a medically oriented environment to become a medical worker in an educational program faces many challenges in adjusting to another type of administrative structure and philosophy and in developing relationships with co-workers who have a different professional orientation. It is, therefore, necessary for school administrators to work with their staffs and the physical therapist in developing plans which provide for channels of communication, lines of authority, medical supervision, standards of professional responsibilities, resources for professional counseling, also parent, teacher, and community participation. Without proper cooperative planning, the physical therapist may find herself giving first aid, supervising the lunch room, playground or rest hour, thus the time available for treatments may be dissipated and the therapist's real function lost. Certain therapeutic activities can be carried on during the lunch period or on the playground, but these must be planned therapeutic activities.

Coordination of the educational and therapeutic programs requires joint planning, operation, and evaluation by the school staff and the physical therapist. There are times when the emphasis may need to be placed on the educational program and at other times the treatment program should take precedent. Conferences including teachers, other school personnel, the public health nurse, and the physical therapist are invaluable in developing mutual understanding and unifying objectives to meet the needs of the individual child. Written schedules which are jointly developed aid smooth working relationships. With an established routine the child, in many instances, can assume responsibility for going for his own treatment. A certain degree of flexibility, of course, must be maintained to permit children to participate in special school events.

Medical referrals with physical therapy prescriptions come from

Editorial

many sources: private physicians, clinics, hospitals, and a physician or team of physicians working with the school. Some states have certain legal requirements which must be met. It is a real challenge to the school physical therapist to develop and maintain two-way communication through established channels so that physicians may know, understand, and effectively use the school services, and so that he may share in the current medical findings.

Parents are an important link in the school physical therapy program. Regular parent conferences, with both parents, if possible, can foster desirable practices in the home. Treatment demonstrations and supervised practice periods should be arranged to familiarize the parents with portions of the treatment they can carry on at home on days when treatment cannot be given at school, or to provide extra drill when needed, or treatment during the summer vacation. Many creative ideas for equipment and self-help devices can come from parents, if professional stimulation and guidance are provided. Participation creates positive human relations for the program.

Community understanding and support are also important to a school physical therapy program. Local groups and organizations can give invaluable help in meeting special needs with volunteer help, supplies, and equipment when the physical therapist works actively to keep the community aware of the program, its needs, and how citizens can participate.

The privilege of participating in the habilitation or rehabilitation of handicapped children in a setting with so called "normal" children presents a unique and rewarding opportunity for the physical therapist to share the enthusiasms and problems of children as they go through the various stages of growth and development.

Many physical therapists have felt isolated in educational programs. Contacts with other physical therapists can be made, however, through local hospitals and agencies. Many state agencies have itinerant physical therapists available upon invitation. By participating, physical therapists can contribute to and learn from school in-service educational programs. State wide meetings planned in connection with state teachers' meetings provide another avenue for professional contacts. Chapter meetings and national conferences provide opportunities for professional sharing and information, but the school physical therapist, like all others, must assume responsibility for his own professional growth, and the caliber of the service he provides reflects directly the professional interest and growth of the therapist.

JESSIE F. WADDELL
Lansing, Michigan

Association News

Two Grants Received by the Association

The American Physical Therapy Association is the fortunate recent recipient of two grants from the Office of Vocational Rehabilitation of the Department of Health, Education, and Welfare. Matching funds for each of the grants are contributed by the Association.

Motion Picture

On June 20 the amount of $24,000 was granted to produce a sound motion picture for use in the schools of physical therapy. This was requested by the Association to be used as a visual aid in the pre-service and in-service training of prospective and enrolled students in the schools of physical therapy and to be shown to public audiences for purposes of interpretation of physical therapy. This film will supplement the present recruitment film "Within Your Hands." Emphasis will be on the rehabilitation procedures and the multidisciplinary approach to patient care so that both prospective students and those who have already chosen their field of concentration will be aware of some of their future responsibilities and opportunities. The project will be developed by the professional consultants in the Association's Department of Professional Education in consultation with an Advisory Committee of the following well qualified members of the Association:

Clara Arrington, Physical Therapy Consultant, Children's Bureau and technical advisor for "Within Your Hands"

Laura K. Smith, Physical Therapy Supervisor—Education, Southwestern Poliomyelitis Respiratory and Rehabilitation Center, Houston, Texas

Bernard R. Strohm, Instructor, Physical Therapy School, The Ohio State University and graduate student in vocational counseling.

On September 1, additional funds in the amount of $15,685 were awarded to provide for the purchase of 125 copies of the film. This amount also provides for preparation of copies of a discussion guide for the leader who is to show the film and additional material to further interpret the profession for those who view the film.

Teaching and Traineeships

A second grant has been received in the amount of $14,595 for a rehabilitation project to hold a five day seminar—the OVR-APTA Institute. Of this amount $4,995 is for a teaching grant and $9,600 covers traineeships. This grant is to supplement the continuing effort to increase the supply of qualified, well-prepared physical therapists for areas of patient care, teaching and research; and to improve the knowledge, attitudes and skills of those currently practicing.

The topic selected for the seminar which will be held in the spring of 1958 is Functional Integration of the Pre-Clinical Preparation and the Clinical Practice of the Physical Therapy Student.

Due to an increase of the traineeship grant over previous years it is anticipated that attendance can be expanded to include one clinical supervisor in addition to one instructor from each school of physical therapy.

Chapter News

Connecticut

As a means of securing a contribution to the Physical Therapy Fund, Inc., the Connecticut Chapter members are selling Christmas wrappings. Each sale will net the Chapter $.45. The project was launched at a dinner meeting of Eastern and Western Districts in September.

Kentucky

The Kentucky Chapter in August published its first newsletter. The first issue presents the officers of the Chapter, a brief history of the Chapter, and carries the following item about the Student Loan Fund.

"It all started back in December, 1955, when an anonymous donor sent us a check for $500 to be loaned without interest to physical therapy students in this state. We were not over our first surprise when a second check was received

for the same amount. As stipulated by the donor, a committee was appointed to establish policies to administer this fund. This money is available for postgraduate training to all chapter members."

Michigan—Western District

A message from the new officers of Western District.

"This is an off-conference year. We don't want your money—we don't want your help on a difficult project—we don't want your good wishes. What we want is your attendance at district and chapter meetings so that we can make it possible for you to go home with something useful."

North Carolina

The Chapter presented the following program at the October meeting as announced in the September newsletter.

Theme of the Program: Planning for Mass Casualties

In event of national disaster resulting in mass casualties, the physical therapist will almost certainly be called upon to assume certain functions not normally ascribed to his field. The function of nurses and other hospital personnel would be altered, too, as necessity demanded. In order for physical therapists to be prepared to function effectively, it was felt they would need to supplement their background and experience with basic instruction, observation, and practice. On this basis, the following program was presented:

2:00 p.m.—Psychology of Mass Disaster, by Dr. Hans Lowenbach, Department of Psychiatry, Duke
2:20 p.m.—Organization of the Medical Team in a Hospital for Handling Mass Casualties, by Dr. William P. J. Peete, Member of Medical Team for National Defense, Duke Hospital
2:40 p.m.—Questions and/or discussion
3:00 p.m.—Instruction and Demonstration Workshop
- a. Application of Emergency Casts and Splints, by Dr. Richard Dodelin, Department of Orthopedics, Duke
- b. Identification of Surgical Instruments and Application of Emergency Dressings, by Dr. Robert Trumbo, Department of Surgery, Duke
- c. Operation and Management of Respirators, by Miss Eleanor Griffin, Department of Nursing Education, Duke

Members were divided into 3 groups and rotated every 40 minutes to a different demonstration, until each group had seen each demonstration.

At the close of the program the film "Proprioceptive Neuromuscular Facilitation" was shown in preparation for a workshop on the technics in late November.

Oklahoma

The September newsletter calls the members' attention to the APTA's program for foreign-trained physical therapists.

"Are there foreign-trained physical therapists working in your area? If so, try to find out as much about them as possible. Have they been placed in the job by the APTA? If not, have they had contact with the National Office? If they have been placed by the APTA, the local chapter will be asked to make an evaluation of the therapist. They should be invited to Chapter meetings and transportation should be offered so that we all may meet them. We can expect quite an influx of foreign-trained therapists in the next few years and though we cannot keep track of all of them, those sponsored by the APTA are our responsibility. They must know the ethics of the profession as we practice here in this country and if they are potential members of APTA we must keep ourselves, as well as the National Office, informed about them."

After thoughts of the 1957 Conference closes with "we should all go to our conventions and see the U.S.A. with the APTA."

Washington

The Chapter held a conference-planning meeting on October 11th. The September newsletter informed the members that the Conference Fund now totals $1,330.92 and urges all to remember: "Less than ten months left before the 1958 Conference! Get ready to do your share."

Wisconsin

From the September, 1957, Newsletter

GAIT TRAINING CLINIC

"When ambulating a patient have you ever wondered just what his problem is? Well, Mary Pat Murray and Arthur Grisa opened our eyes with three excellent two-hour lectures on normal locomotion and the deviations from a normal gait pattern. These lectures were held at the Curative Workshop in Milwaukee. They were given for any interested member of the Wisconsin Chapter.

"Approximately 40 members were in attendance at the first lecture when they suddenly became startled if not horrified when presented

with a small examination which covered several pages. However, they recovered and it proved to be an excellent way of gearing the course to the class.

"The course proved to be very advantageous. Our thanks and appreciation go to Miss Murray and Mr. Grisa for giving us a deeper insight into normal and abnormal locomotion."

The following is a letter dated Aug. 20, 1957 received from Ada E. Follett, retiring president of the Wisconsin Chapter.

"I'm going to at last try to answer your questions concerning our past and present activities in connection with Community Welfare Councils. Several years ago the Chapter voted to pay for a page in a publicity brochure, assembled and published by the Community Welfare Councils of Madison and Milwaukee, which included the various health and medical organizations and agencies.

"In Milwaukee, the Chapter has had for a number of years a fairly close tie-up with the Community Welfare Council since our Public Relations Chairman automatically becomes a member of the Council. We have realized the importance of this and this year will be represented on the Madison Council by at least one member.

"This week is our third year of participation in Health Land at the State Fair. Our booth this year is pointed at Education—last year it was Recruitment. We feel that this is so important that it has become a 'must' as an annual activity.

"During the summer a series of classes was held in Milwaukee on exhibits. I presume it was sponsored by CWC. A professional exhibit man donated of his time and talents instructing the class on the do's and don'ts of exhibiting. About seven P.T.'s attended, two from Madison and the rest from the Milwaukee area.

"Governor Kohler's Conference on an Aging Population was attended by several of us. Though we were a cooperating organization we somehow were omitted from the list. A brochure is enclosed.

"We had our first Executive Board meeting the other night to make plans for the year. Thursday I'm going to Milwaukee to man the P.T. booth at the Fair."

Member Speaks to Heart Association

Cecile Freese, Chief Physical Therapist at Theda Clark Memorial Hospital, Neenah, Wisconsin, presented a paper, The Role of the Physical Therapist in the Rehabilitation of the Heart Patient, at the June, 1957, meeting of the Wisconsin Heart Association.

New Student Members

University of Michigan

Barbara Anderson
Marjorie Becker
Louise Carter
Donna Collins
Diana Cook
Rita Hochman
Sharon McGovern
Linda Nelson
Elizabeth Oberlin
Dorothy Reading
Donna Rowe
Constance Sarason
Gail Shovein
Dianne Taylor

Members' Publications

"A Device for Measuring Rotation of Neck" by Minerva W. Chesire appeared in the September, 1957, issue of the *Archives of Physical Medicine and Rehabilitation.* Miss Chesire, recently retired from the practice of physical therapy, was formerly on the staff of the Veterans Administration Center, Wichita, Kansas.

Marriages

Blanche A. Aumueller, of Milwaukee, Wis., now Mrs. Blanche A. Foote, Milwaukee.
Joan C. Bissonnette, of Madison, Wis., to James E. Brewer II, Madison.
Audrey Chambless, of Oklahoma City, Okla., to Jesse McClellan, Jr., Dallas, Tex.
June Cleveland, of Los Angeles, Calif., now Mrs. June C. McKean, Anaheim, Calif.
Joan Crummey, of Albany, N. Y., to Walter M. Firra, Houston, Tex.
Marie Hickey, of Pontiac, Mich. to Gerry Trobridge, Pontiac.
Mary McKinney, of Butlerville, Ind., to Jack C. Edmonds, Butlerville.
Marianne T. McPhillips, of Albany, N. Y., to John Cunningham, Jr., Albany.
Rita Menghini, of Lawrence, Kans., now Mrs. Rita M. Jurcyk, Kansas City, Kans.
Bonnie L. Morrison, of Corpus Christi, Tex., to Robert F. Giltner, New Orleans, La.
Mary E. Nesbitt, of Boston Mass., to Lt. Col. Wesley F. St. Coeur, Montpelier, Vt.
Marie Rau, of St. Paul, Minn., now Mrs. Marie R. Clyne, St. Paul.
Marilyn Scheller, of Boston, Mass., to William Elias, Ballardvale, Mass.
Shirley Joyce Schutte, of Prairie Village, Kans., now Mrs. Shirley S. Bailey, Kansas City, Mo.
Ruth Van Nakin, of Los Angeles, Calif., to David Ankburgh, Los Angeles.
Biruta E. Zimmerman, of New Philadelphia, Pa., now Mrs. Biruta Z. Reese, New York, N. Y.

Nesbitt—St. Coeur

Mary E. Nesbitt of Cambridge, Massachusetts, was married to Lt. Col. Wesley F. St. Coeur, United States Air Force, on Sept. 7, 1957. Colonel and Mrs. St. Coeur are making their home at Riverton Road, Berlin Corners, Vermont.

A Director of the Association, Mary St. Coeur has served on the Board of Directors for the past seven years. She has been Speaker of the House of Delegates, Vice President and President as well as serving on several National committees. Until August, 1957, Mrs. St. Coeur was Supervisor of Physical Therapy, Massachusetts General Hospital.

Colonel St. Coeur is the Ground Observer Corps Coordinator for the Air Force in Vermont. His service includes duty with the Corps of Engineers, U. S. Army, and with the Air Force at various stations in the United States, Guam, and Japan.

Association members wish the St. Coeurs all that is good in the years to come.

APTA Represented at American Hospital Association Convention

Jane Carlin, President, and Lucy Blair, Associate Executive Director and Senior Consultant in the Department of Professional Services, participated as members of a panel which described the development of the AHA-APTA manual, *Physical Therapy—Essentials of a Hospital Department*, during the 59th Annual Convention of the American Hospital Association held in Atlantic City, September 30–October 3.

The Association's exhibit at the Convention was in charge of Mary E. Haskell, Executive Director. Under the title, Elements of Success in Your Physical Therapy Department, material from the manual was highlighted as follows: Personnel, Layout, Prescription and Records.

American Rheumatism Association Announces New Journal

Arthritis and Rheumatism, forthcoming official journal of the American Rheumatism Association, is to be a bimonthly publication starting with the January-February issue of 1958. The journal will cover the field of connective tissue disorders, in particular rheumatoid arthritis, osteoarthritis, rheumatic fever, gout, the so-called "collagen diseases" and nonarticular rheumatism. Greene and Stratton, Inc., New York, will serve as publishers.

Test on Page 737

Answers

1. Acetabulum. L. *acetum* = vinegar; *abulum* = a holder or receptacle; *acetabulum* = a vinegar cup.
2. Fibula. L. *fibula* = a clasp or brooch, especially the needle of a brooch. From *figo* = I fasten.
3. Radius. L. *radius* = spoke of a wheel.
4. Clavicle. L. *clavicula*, diminutive of clavis = a key or bolt.
5. Tibia. L. *tibia* = a flute.
6. Scapula. L. *scapula* =shoulder blade. This word is said to have been adopted from the Gr. *skapstein* = to dig, because the bone resembles a spade.
7. Patella. L. *patella* = a little plate; (An old term for patella was knee-pan).
8. Pelvis. L. *pelvis* = basin.
9. Olecranon. Condensed form of Gr. *olenokranon*, from *olene* = elbow; *kranos* = helmet.
10. Diaphragm. Gr. *diaphragma* = a wall or partition, from *dia* = across; *phragma* = a wall.
11. Ethmoid. Gr. *ethmos* = a sieve; *eidos* = resemblance.
12. Malleolus. L. diminutive *malleus* = hammer.
13. Coracoid. Gr. *korax* = a raven; *eidos* = resemblance. The Greek word was also used for anything hooked or pointed like a raven's beak.
14. Coccyx. Gr. *kokkyx* = cuckoo. Herophilus is credited with naming this structure, the coccyx, because of a supposed resemblance to the bill of a cuckoo.
15. Odontoid. Gr. *odous* (odont) = tooth; *eidos* = resemblance.
16. Manubrium. L. *manubrium* = a handle, from *manus* = a hand. The sternum is shaped like a sword, and is divided into the manubrium, the gladiolus (L. diminutive of *gladiium* = sword), and the xyphoid (Gr. *xiphos* = sword; *eidos* = resemblance).
17. Sphenoid. Gr. *sphen* = wedge; *eidos* = resemblance. Or Cuneiform. L. *cuneus* = wedge; *forma* = form.

Pepper, O. H. P.: Medical Etymology, Philadelphia, W. B. Saunders Company, 1949.
Skinner, H. A.: The Origin of Medical Terms, Baltimore, The Williams and Wilkins Company, 1949.

Rehabilitation Conference in Guatemala

Mildred Elson, Program Coordinator

In cooperative action with the Government of Guatemala Republic, and mainly in the interest of the countries in the Caribbean area, the International Society for the Welfare of Cripples is sponsoring the Third Inter-American Conference on Rehabilitation, to be held in Guatemala City, November 11 through 14, 1957.

Under the patronage of President and Mrs. Luis Arturo Gonzalez Lopez, and at the invitation of the Guatemalan Minister of Public Health and Welfare, Dr. Carlos Sosa Barillas, and Minister of Foreign Affairs, Lic. Jorge Skinner Klee, the International Society is organizing the broadest possible program over the four-day period. It is being designed to cover a range of basic rehabilitation topics of the most urgent interest to physicians, surgeons, nurses, physical and occupational therapists, educators, administrators, social and community workers, vocational counselors, prosthetic personnel and public health officials. Invitations to participate in the Conference have been extended to delegates and experts in all the seventeen Caribbean and neighboring South American nations, as well as Canada and the United States.

All presentations will be either in Spanish or English, with simultaneous translation into the language not being spoken.

Opening at 9:00 A.M. on Monday, November 11, a general session of the Conference will be addressed by Sr. Lic. Luis Arturo Gonzalez Lopez, President of the Republic of Guatemala. Opening addresses will also be made by Dr. Carlos Sosa Barillas, Minister of Public Health and Welfare; a representative of the United Nations; Dr. Howard A. Rusk, Immediate Past President of the International Society for the Welfare of Cripples; and Donald V. Wilson, Secretary General of the International Society, who will introduce guests from abroad.

General sessions to follow will be addressed by internationally known rehabilitation figures on such subjects as cleft palate rehabilitation, employment of the handicapped, and the development of rehabilitation programs by private and public groups.

Clinical and technical sectional meetings will be held for physicians and surgeons, therapists, nurses, social workers, and other rehabilitation personnel, on such subjects as poliomyelitis, paraplegia, neuromuscular disabilities, tuberculosis, cardiovascular disease, as well as rehabilitation of the blind, the deaf, and the speech handicapped. Opportunities to visit local rehabilitation services will be available.

The Conference social program will include an official reception by the Ministry of Pubic Health and Welfare and excursions to Lake Amatitlan, Lake Atitlan, Antigua and other points of scenic and historic interest.

Mildred Elson, former Executive Director of the American Physical Therapy Association, and First Vice President, World Confederation for Physical Therapy, has accepted an assignment in Guatemala City for a month prior to the Conference, as ISWC representative and Program Coordinator.

This Conference on Rehabilitation represents one phase of the work program of the International Society for the Welfare of Cripples, which is a federation of voluntary organizations in 34 countries, all sharing a common interest in improving services for disabled men, women, and children. The last such meeting, also embracing mutual rehabilitation plans and problems in the Caribbean area, was sponsored by the International Society in Miami, Florida, in September, 1956, in conjunction with the annual convention of the Florida Society for Crippled Children. Additional information about the forthcoming Guatemalan Conference can be obtained from the Secretary General, ISWC, 701 First Avenue, New York 17, New York.

Changes in RA Structure for Medical Specialists and Nurses

President Eisenhower's signature on amendments to the Army-Navy Nurses Act of 1947 will effect the greatest changes in grade structure, promotion, and retirement of Regular Army members of the Army Nurse Corps and the Army Medical Specialist Corps since the original law was passed a decade ago.

Worldwide support of the proposed changes was given by both Regular and Reserve personnel of the two Corps as well as by the civilian professional organizations in the fields represented by this personnel. Agnes Ohlson, president of the American Nurses Association and now president of the International Council of Nurses, appeared in behalf of the legislation before the Congress.

While this new law also applies to the Navy and Air Force nurses and medical specialists, the

Army was responsible for its presentation to Congress.

For the first time in the 56 years of history for the nurses and the 10 years of history for the dietitians, physical therapists and occupational therapists, each of these groups will be on a basis for organizational and similar procedures parallel to that of all other Regular Army officers.

The authorized strength of the Regular Army Nurse Corps will be 2,500; the Army Medical Specialist Corps, 350. Formerly this number was not fixed, but fluctuated in a percentage relationship to the entire Army strength. The advantage of the change lies in a firm figure for procurement purposes and a sound planning base for mobilization.

For the average nurse and medical specialist, the new legislation will have far-reaching results in career improvements. Previously the limitation put upon the number of Regular Army captains, who might be advanced to the rank of major, kept scores of these officers in the lower permanent grades until their retirement. Now all captains, with 14 years of service and fully qualified for promotion, can anticipate advancement to the grade of major, regardless of the number already in that rank.

Col. Harriet S. Lee, Chief of the Army Medical Specialist Corps, in her testimony before the Congressional hearings, said in part:

"The law which established us in 1947 provided for permanent grades only through that of major, with the number in that grade limited to 5 per cent of the authorized strength of the Corps. Because of this limitation, many of our officers could never attain a grade higher than captain and had to retire at that grade. This is the only Corps in the Army for which there is no authorization at this time for the permanent rank of lieutenant colonel.

"It is the general consensus that this is an inequity; that the grade structure should compare favorably with that of other Corps; and that it should provide promotion potentials commensurate with the educational background of its officers with the professional and administrative duties with which they are charged."

Additional expansion has been made, also in the highest grades. The nurses will have 5 colonels and 107 lieutenant colonels. The medical specialists will have 1 colonel and 20 lieutenant colonels.

The plan for the Army Medical Specialist Corps includes the promotion of 10 officers to lieutenant colonel and 26 to major.

This promotion plan would not fill the proposed grades of colonel and lieutenant colonel in either Corps in fiscal year 1958. Thus vacancies will be held for the future to prevent a stagnated situation. The Corps should be up to the proposed authorized grades in two or three years and then through attrition, vacancies would be available each year.

Integration of the changes will be accomplished as soon as possible. All members of the two Corps, stationed around the globe, will receive an interpretative report of the new legal provisions.

Lt. Col. Emilie K. Jenson, ANC, who has been on special detail to assist in the presentation of the amendments, is to remain in the Office of The Surgeon General of the Army for further work on the implementation of this legislation.

New APTA-AHA Manual Available Soon

The new manual entitled *Physical Therapy—Essentials of a Hospital Department* is now available.

During the past year, the Joint Committee of the American Hospital Association and the American Physical Therapy Association accepted the responsibility of rewriting the 1949 manual, entitled *Essentials of a Hospital Department—Physical Therapy*. The new manual has been designed to be of value to those responsible for establishing and developing physical therapy departments in general hospitals primarily. There are guidelines for the arrangement of work units, selecting equipment and supplies, and providing for records and reports. The assurance of quality of the services through medical direction and selection of personnel is discussed.

The manual has been approved for publication by the Board of Trustees of the American Hospital Association and the Board of Directors of the American Physical Therapy Association. As a publication of the American Hospital Association it will have wide distribution among member hospitals of the American Hospital Association.

Copies of the new manual may be purchased for *one dollar* from the American Physical Therapy Association or the American Hospital Association.

Send Us Your Name . . . .

If you plan to move, send us your name and your new address *five* weeks before you make the change. This insures delivery of your *Review* and correspondence from the National Office.

Student Column

Connecticut Chapter Has Organized Student Branch

The following item was reprinted from the August 1957 issue of *Nutmeg News*, the newsletter of the Connecticut Chapter of the APTA. It points up what one chapter is doing to include physical therapy students in the activities of the Association. Students in other schools might wish to contact Miss McMullen for further details and then present this or similar ideas to their own local chapter.

"The Student Branch last year (1956) and has this year sent a delegate to the annual APTA conference. As this year's representative from the Branch, I would like to report to you, the members of the Connecticut Chapter, the importance and interest I place in the Conference.

"The first awakening the Conference afforded me was the realization of the necessity and importance of the Code of Ethics. I honestly feel that if more students had the opportunity I had to listen to the discussion on the amendments to this Code, that the bearing of the APTA on a qualified physical therapist would be readily enhanced and all 'ethics' classes might be taken with greater concern. I now know why I read and studied the Code of Ethics. I know also that this code will continue to protect qualified physical therapists as long as the House of Delegates is composed of persons capable of using good judgment in placing their votes.

"The second awakening I had was to the fact that the Connecticut Chapter is the only chapter with an official Student Branch and therefore that I was the only student representative to the Conference. I might add that every time I explained who I was representing and how I was able to attend, I received remarks such as: 'Well! Congratulations to Connecticut!' It seems that gaining interest on a student level is considered important by all, but that Connecticut is the only chapter which has taken great strides toward accomplishing this. The financial makeup the chapter has for aiding us with our projects is what amazed and interested many people with whom I spoke.

"Another importance I personally attach to the Conference is that many of the names which always appear in the *Review* suddenly became personalities to me. I had an opportunity to listen to most and speak with several of the officers. Certainly my interest in reading the *Review* has greatly increased for many reasons.

"I have presented just a very few thoughts on what I gained from the Conference. Naturally I also obtained much from the many professional talks I attended and friends I made.

"I do feel most fortunate for having been elected to represent the Connecticut Student Branch at the Annual APTA Conference and hope that in the future other students throughout the country will also be granted this opportunity."

AUDREY MCMULLEN, *President*
Student Branch
Connecticut Chapter

The Story of Little Red Brachialis

One day little Red Brachialis was asked by her mother, Mrs. Anconeus, to go to her Grandmother Biceps' house to get some Origin and Insertion cookies. "Yes," she said, "but first I have to call my boyfriend, Brachio Radialis, to postpone our date to a later hour."

On the way to her Grandmother's house in Glenoidfossa, she walked past Triceps Wolf. He thought he would be able to catch her if he took a shortcut through the Inter Tubercular Groove, and off he went. Meanwhile, Little Red Brachialis had picked some capillaries and lymph glands to put in a vessel for her Grandmother. As she knocked on the door of Mrs. Biceps', she heard a gruff reply. Inside she said, "Grandmother, what a deep voice you have." Just then he reached out to grab her, but Brachio Radialis was there to save her. Years later, little Red Brachialis and Brachio Radialis settled down in Radio Ulnar Joint.

DOROTHY ANDREWS
Medical College of Virginia

Reprinted by permission of the *Baruch Scoop*.

Physical Therapy Programs

APPROVED BY THE COUNCIL ON MEDICAL EDUCATION AND HOSPITALS OF THE AMERICAN MEDICAL ASSOCIATION

Schools offering the four year program leading to a baccalaureate degree accept high school graduates and transfer students. Schools offering the 12 to 16 months' program leading to a certificate accept students who have completed all or most of their undergraduate work providing they meet certain course requirements. Recipients of a degree and/or certificate have equal professional status. For specific information regarding each school's entrance requirements, tuition, and other fees, write to the physical therapy director indicated below. All students should investigate course requirements *early*.

	Degree	*Certificate*
CALIFORNIA		
Mary J. Dodge School of Physical Therapy Childrens Hospital Society 4614 Sunset Boulevard Los Angeles 27	‡	†
Ronald A. Hershey School of Physical Therapy College of Medical Evangelists Loma Linda	†	†
Lucille Daniels Division of Physical Therapy Stanford University Stanford (Palo Alto)	†	†
Margery L. Wagner Curriculum in Physical Therapy University of California The Medical Center San Francisco 22	†	†
Charlotte W. Anderson Department of Physical Therapy University of Southern California University Park Los Angeles 7	†	†
COLORADO		
Dorothy Hoag Curriculum in Physical Therapy University of Colorado Medical School Denver 20	†	†
CONNECTICUT		
Frances Tappan School of Physical Therapy U 101 University of Connecticut Storrs	†	
ILLINOIS		
Elizabeth C. Wood Course in Physical Therapy Northwestern University Medical School 303 East Chicago Avenue Chicago 11	†	†
IOWA		
Olive C. Farr Physical Therapy State University of Iowa Hospitals Iowa City		†
KANSAS		
Ruth G. Monteith Section of Physical Therapy University of Kansas Medical Center Kansas City 12	†	†
LOUISIANA		
Isadore Brown, Acting School of Physical Therapy Charity Hospital of Louisiana New Orleans 12		†
MASSACHUSETTS		
Adelaide L. McGarrett Physical Therapy Department Boston University Sargent College 6 Everett Street Cambridge 38	†	†
Constance K. Greene Department of Physical Therapy *Bouve-Boston School, Tufts University Medford 55	†	
Shirley M. Cogland *Program in Physical Therapy Simmons College-Children's Hospital 300 Longwood Avenue Boston 15	†	†
MICHIGAN		
Virginia Wilson Curriculum in Physical Therapy University of Michigan University Hospital Ann Arbor	†	†
MINNESOTA		
Darrell D. Hunt School of Physical Therapy Mayo Clinic Rochester		†
Wilbur L. Moen Course in Physical Therapy University of Minnesota 860 Mayo Memorial Hospital Minneapolis 14	†	

* Accepts women students only.

‡ Baccalaureate degree available from an affiliating college or university.

	Degree	Certificate
MISSOURI		
Sr. M. Imelda, S.S.M. Department of Physical Therapy St. Louis University 1325 South Grand Boulevard St. Louis 4	†	
Beatrice F. Schulz Department of Physical Therapy Washington University School of Medicine 660 So. Kingshighway St. Louis 10	†	
NEW YORK		
Dorothy L. McLaughlin *Division of Physical Therapy The Albany Medical College Albany 8	‡	†
Mary E. Callahan Courses for Physical Therapists Columbia University College of Physicians & Surgeons 630 West 168th Street New York 32	†	†
Elizabeth C. Addoms Physical Therapy Curriculum School of Education, New York University Washington Square East New York 3	†	†
Mildred F. Heap Program in Physical Therapy University of Buffalo 2183 Main Street Buffalo 14	†	†
NORTH CAROLINA		
Helen Kaiser Division of Physical Therapy Box 3403, Duke Hospital Durham		†
OHIO		
Robert D. Kruse Course in Physical Therapy Frank E. Bunts Educational Institute 2020 East 93rd Street Cleveland 6		†
Gladys G. Woods School of Physical Therapy Ohio State University University Hospital Columbus	†	†
OKLAHOMA		
Thelma Pedersen School of Physical Therapy University of Oklahoma, Medical Center Oklahoma City 4	†	†
PENNSYLVANIA		
Dorothy E. Baethke Division of Physical Therapy University of Pennsylvania 205 S. 34th Street Philadelphia 4	†	†
Kathryn Kelley Curriculum in Physical Therapy D. T. Watson School of Physiatrics Leetsdale	‡	†
PUERTO RICO		
(All classes given in Spanish) Lutgarda V. Piñeiro School of Physical & Occupational Therapy Professional Bldg., 8th Floor Stop 22, Santurce	†	†
TEXAS		
Doris E. Porter Grady Vaughn School of Physical Therapy Baylor University Hospital Dallas 1	†	†
Cecelia J. Lee School of Physical Therapy Hermann Hospital Houston 25	‡	†
Ruby Decker School of Physical Therapy The University of Texas Medical Branch Galveston	†	†
VIRGINIA		
Susanne Hirt School of Physical Therapy Medical College of Virginia Richmond 19	†	
WISCONSIN		
Beth J. Phillips Curriculum in Physical Therapy Marquette University School of Medicine 561 North 15th Street Milwaukee 3	†	
Margaret Kohli Course in Physical Therapy University of Wisconsin Madison 6	†	†
U. S. ARMY MEDICAL SERVICE		
*Physical Therapy Course Army Medical Service School Brooke Army Medical Center Fort Sam Houston, Texas Write to: The Surgeon General Department of the Army Washington 25, D. C. Att.: Personnel Division		†

* Accepts women students only.

‡ Baccalaureate degree available from an affiliating college or university.

Please direct all inquiries regarding tuition, entrance requirements and other specific information to the school and *not* to the American Physical Therapy Association.

Abstracts

Rehabilitation of Neuromuscular Disturbances

Eric Denhoff and Margaret H. Jones (293 Governor Street, Providence 6, Rhode Island), PEDIATRICS, 20:165-169, July 1957

This article is the summary of a round table discussion presented at the annual meeting of the American Academy for Cerebral Palsy, Oct. 8, 1956. The summary was prepared by Dr. Raymond R. Rembolt.

The manifestations of brain damage, "neurogenic disturbance," are several. Evidence of this damage or dysfunction may be in the form of cerebral palsy, mental retardation, epilepsy, behavioral problems, or other abnormalities. Cerebral palsy typifies the child with neuromuscular disturbances and is therefore used as the basic pattern in this discussion. The concern of the physician in rehabilitation must be directed towards prevention of abnormalities, motor rehabilitation, correction of associated disabilities, education, personality adjustment of the child, and "treating the family." Early complete diagnostic appraisal, systematic management based upon the findings of the diagnostic evaluation, and intelligent prognostication are the keys to successful rehabilitation.

It is important to accomplish the diagnostic, and if possible, at least a tentative prognostic assessment early, between 4 months and 2 years of age. The behavioral stages are briefly outlined according to Denhoff and Holden. The corresponding therapeutic principles which are applicable to the given stage are also listed briefly. A record of measurement of accomplishments is valuable in estimating future expectations and in appraising the adequacy of the currently prescribed therapeutic program. A chart has been developed by Dr. Margaret H. Jones which records certain developmental items in a graphic manner, against chronological age and in relationship to accomplishments noted previously.

Comprehensive rehabilitation should include numerous factors other than the strictly medical treatment phase. These are discussed briefly. One of the major aims is to prepare the patient for eventual vocational placement suited to his ability. Mention is made of a vocational service rating scale which was published by S. H. Feingold in the May-June 1956 issue of *Cerebral Palsy Review*. It is strongly emphasized that the early development of many of the traits contained in this scale is of great importance. This must be started early in life and must be a continuing process promoted simultaneously in the home, school, treatment center, and in other facilities, when occasion permits.

Ultrasonic Research: Progress During the Past Three Years

Albert W. Bauer (England), BRIT. J. PHYS. M., 20: 151-158, July 1957

In Great Britian there has been little ultrasonic research in the past three years. However, in the world as a whole an enormous amount of work has been done and progress has been made. Ultrasound research workers have tried to gain insight into the mechanism of ultrasonics by experimental lesions with large doses on animals and on isolated living tissue. Thus incorrect impressions were created in the uninitiated medical readers, and ultrasonics were rejected as being dangerous. Numerous experiments using intentional overdosages have shown that ultrasound can produce burns as well as cavitation. Attention has also been distracted from the good results of ultrasonic treatment where much smaller intensities were used without results.

A group of research workers found that the change of metabolism measured after sonation is due to a rise of temperature in the tissue which is produced by the absorption of ultrasonic energy. The difference between a metabolism raised by ultrasound and by overheating in a thermostatically controlled environment is merely to be ascribed to a different distribution of heat: heat produced by ultrasonic energy differs from any other form of heat by selective ultrasonic absorption in different parts of tissue and by reflection and additional absorption on the interfaces.

Busnel, Chauchard, and Mazoué in 1956 believed that they had proved the great sensitivity of the neuromuscular system to ultrasonic stimulation, and showed that the ultrasonic effect leads back to a specific physical action which differs from the thermal effect. They showed that there are many significant differences between the biological reactions to hyperthermia and ultrasound. Koeppen (1956) defined the biological action of ultrasound as local intensification of metabolism evoked by hyperemia and increase of temperature.

Otto (1953) treated the dorsal segments of healthy individuals with infrared radiation, short-waves, and ultrasound, thus necessarily producing changes in the area of the terminal blood stream of the segments treated. The rise of temperature in the extremities of the persons treated was especially obvious immediately after exposure of the respective dorsal segments to ultrasonic energy, as compared with long- and short-wave applications.

The author presents a review of current literature in the article and includes an extensive bibliography.

Electromyographic Findings in Dermatomyositis

Y. T. Oester, A. A. Rodriquez and J. J. Fudema (Stritch School of Medicine of Loyola University, Chicago, Illinois), A. M. A. ARCH. DERMAT., 76: 91-95, July 1957

Dermatomyositis is probably best described as an inflammatory reaction of skeletal muscles, accompanied by an acute or subacute degeneration. Changes in the skin may also be prominent, leading sometimes to a result which has been described as sclerodermatous. Reduced electrical excitability of the skeletal muscles is said to occur, but faradic response continues. The usual course of the disease and histopathology are described briefly in this article.

Only three references are found in literature which describe, in any detail, electromyographic findings associated with this disease. This study was planned to provide further definitive electromyographic data. In addition, it seemed that a study of dermatomyositis, if really limited to muscle inflammation, and not primarily involving neurological elements, would offer an approach to a separation of the contributions of the muscular and the neurological components of the electromyographic picture. Electromyographic examinations were performed on four patients. Unipolar needle insertions were used in all cases, and the electron oscilloscope was used for the recordings.

The four cases present a wide variety of electromyographic finding

—from the simplest electromyographic picture where only polyphasic motor units were seen, to the most complex picture where almost all possible varieties of electromyographic findings were seen. These consisted of fibrillation potentials, short-lasting motor-unit potentials of low voltage, complex polyphasic motor units and high-frequency discharges. These findings were similar to those found in studies by Guy and O'Leary. It is suggested then that these groups of findings may result in an entirely characteristic picture. Electromyography, therefore, appears to be a most valuable tool in the diagnosis of myositis, especially dermatomyositis.

The Etiology and Pathogenesis of Funnel Chest, Pigeon Breast, and Related Deformities of the Anterior Chest Wall

Charles W. Lester (Bellevue Hospital, New York, N. Y.) J. THORAC. SURG., 34: 1-10, July 1957

The basis of material reported in this article includes 162 operations in 150 cases, a number of cases who did not come to operation, and 6 autopsies seen at Bellevue Hospital.

The author classifies anterior chest wall deformities in three groups: (1) the depression deformities or funnel chests (pectus excavatum), (2) the protrusion deformities or pigeon breasts (pectus carinatum) and various other deformities characterized by protrusion, and (3) those deformities having physical characteristics of both. In the latter group the sternum may be retracted while the upper portion may protrude or there may be an asymmetrical funnel chest with the more prominent side protruding. Occasionally a protrusion in early childhood may end up as a funnel chest after puberty. Thus, this group is a heterogeneous mixture, but the dominant features of each case tend to place it in one of the first two groups.

A study of anterior chest wall deformities of congenital or developmental origin indicates that, from the point of view of etiology and pathogenesis, the depression deformities and protrusion deformities have much in common. Heredity is considered to be a most important etiological factor and seems to apply to anterior chest wall deformities in general and not specifically to one type or other. For instance, one sibling may have a funnel chest and another a pigeon breast. In one instance, a pair of dissimilar twins, one with pigeon breast and one with funnel chest, is cited.

The principle factors in the pathogenesis of these deformities is the size and shape of the diaphragm and the disproportionate growth of the ribs. If a short central tendon of the diaphragm is the dominant factor, funnel chest develops. If disproportionate growth of the ribs is the dominant factor, a protrusion deformity will result. Results of surgical procedure and other pertinent observations are cited in support of these conclusions. Modification of the dominant deformity may be found in the presence of both a short central tendon and overgrowth of ribs in the same person.

Pseudofunnel chest is an inspiratory retraction of the anterior chest wall due to some pathological condition in the cardiorespiratory system. The condition is noted at birth or shortly thereafter. Traction on the xyphoid to restrict or prevent the paradoxic motion may bring dramatic relief.

Hand Deformities in Rheumatoid Disease

D. A. Brewerton (King's College Hospital, London), ANN. RHEUM., DIS., Lond., 16: 183-197, June 1957

Three hundred patients with rheumatoid disease were examined clinically to determine what deformities had developed in their hands, and what effect these had on function. The patients were a typical cross-section of those seen in hospitals. Most of them were outpatients, only 15 having been seen in the wards. None was bedridden. Every structure of the hand was examined in detail, including each joint, tendon, and muscle. Functional tests of the hand were based on the patient's ability to perform four basic grips: (1) picking up and manipulating small objects, (2) gripping a door key, (3) gripping objects with a handle, such as a knife, and (4) gripping a handrail or a hammer. An analysis of these grips is presented. A few patients were observed at greater length while doing a representative series of everyday tasks.

There are a number of varying deformities and deforming factors which may contribute to the appearance and function of the involved hand in rheumatoid disease. The most important deformity in terms of its disabling effect is loss of flexion of the fingers, particularly the ring and little finger. The ring and little finger are often expected to exert a stabilizing influence by compressing a handle against the palm or thenar eminence. The functional capacity of the index and middle fingers is enhanced by working with the thumb. Loss of extension of the fingers is not as disabling as loss of flexion unless it is severe.

Ulnar deviation, found in 82 patients (27 per cent), was considered unlikely to be a serious disability unless there was associated loss of flexion in the metacarpophalangeal joints. Anterior subluxation was found combined with ulnar deviation in 44 of the 82 patients. The most important feature of unlar deviation is its appearance. Its cause is not fully understood. Rheumatoid processes in and around the metacarpophalangeal joints undoubtedly contribute to both ulnar deviation and anterior subluxation of these joints. Intrinsic muscle contractures and lateral dislocation of tendons were seen to be the primary causes in a small number of patients. How much each of these factors contributes to the development of ulnar deviation is unknown.

Sixty-eight per cent of the patients had one or more significant deformities in their thumbs. Loss of opposition was the most common.

The authors state that weakness of the intrinsic muscles inevitably occurs, but evaluation of their strength is unreliable and, therefore, little can be said of its importance in development of deformities.

Assessment of spasm and contracture of the intrinsic muscle is difficult and, although it is important, just *how* important it is as a deforming factor in the rheumatoid hand is impossible to say.

Tendon lesions are common and include the "trigger" fingers which usually resolve. Spontaneous rupture of tendons is not uncommon.

In using passive and active movement, the author suggests that all joints be exercised but that special attention be given to the movements whose loss most often results in disability, viz., the metacarpophalangeal and proximal interphalangeal joints of the ring and little fingers and opposition, adduction and abduction of the thumb. Both spasm and contracture should be overcome by active or passive stretch. The best method is to extend the metacarpophalangeal joints while keeping the interphalangeal joints flexed. The

patient can be taught to do this as a regular exercise.

Several problems which still remain unanswered concern the natural history and the prognosis of many individual deformities of the hand, the effect of drugs, physical measures, and surgery on individual lesions and on prevention of deformity.

Hemiplegia—Its Incidence and Association with Aphasia and Fractures in a Chronic Disease Hospital

Eugene J. Rogers (Cumberland Hospital, Brooklyn, New York) N. YORK STATE J. M., 57: 2220-2224, July 1, 1957

A statistical analysis of the hemiplegic syndrome based on a review of the charts of 1,317 patients is presented. The charts covered all discharges and deaths from the opening date of Bird S. Coler Hospital and Home (a chronic disease hospital) in July, 1952, to January, 1955. The hemiplegic syndrome occurred in 199 cases. In other words the syndrome accounted for 15.1 per cent of the total hospital discharges. The highest incidence of hemiplegia occurred in the 60 to 64.9 age group. Men constituted 58.7 per cent and women 41.3 per cent of all the hemiplegic patients. Right hemiplegia occurred in 55.7 per cent of all cases.

Aphasia occurred in 45 per cent of all patients. It was associated with 58.6 per cent of the right hemiplegias and 23.9 per cent of the left hemiplegias, thus confirming the classic association of aphasia with right hemiplegia. It was pointed out, however, that language disturbance is determined not only by a disturbance in the dominant cerebral hemisphere but by a number of factors not well defined or determined.

Fracture frequency for the 199 hemiplegic patients was 16 per cent. Of those hemiplegic patients sustaining fractures, 18.2 per cent were women and 14.5 per cent were men. The hip area was the site of predilection for this involvement with a 43.7 per cent incidence in hemiplegia cases. The incidence of fracture is considered sufficiently high to warrant a more frequent skeletal X-ray survey. The recognition of this danger in older hemiplegic patients should stimulate the proper care and safeguards so that complications may be minimized.

The data on the incidence of hemiplegia in this study revealed no significant statistical variation among the sexes. The author makes reference to several other studies on hemiplegic patients and poses several pertinent questions related to etiology, incidence, age, and sex factors. He emphasizes the need for and importance of additional investigations into the etiologic, hereditary, geographic, socioeconomic, and psychologic influences on the incidence of hemiplegia and its attendant complications.

Paralytic Valgus Deformity of the Ankle

Amnon Fried and Carlos Hendel (Beilinson Hospital, Tel Aviv, Israel), J. BONE SURG., 39-A: 921-932, July 1957

As a result of the 1950-1953 poliomyelitis epidemic in Israel, which primarily affected the children of ages 1 to 3, the authors came in contact with many paralytic valgus deformities of the ankle. Since stabilization was not considered advisable in small children, restoration of muscle balance seemed the most desirable method of treatment. Twenty reconstruction operations were performed. Normal foot alinement was achieved in 15, moderate valgus deformity resulted in 3, 1 case was overcorrected, and correction of the deformity in another instance followed a second operation reanchoring a transferred tendon. Thereafter, 35 more operations were successfully completed but are not included in this report because follow-up time is considered too short to be conclusive.

Paralysis of the tibialis anterior or tibialis posterior or both may result in varying degrees of valgus deformity. If the antagonists remain functional, the dynamic pull results in a deformity that cannot be corrected by bracing and which may become fixed due to bone changes. Hence, residual muscle power is evaluated in weight-bearing and nonweight-bearing positions. On the basis of these evaluations the operative procedures are outlined with the objective of balancing inversion and eversion. As a result of the muscle transplants, the authors discovered that paralysis of the posterior tibial produced the greatest deformity because not only did severe valgoplanus develop, but also the principal arch supporter was lost. Thus, surgical correction for a paralyzed tibialis anterior with the peroneus or other secondary dorsiflexors attached to the first cuneiform proved inadequate unless there was an active tibialis posterior. Most of the surgical procedures involved substituting the peroneus longus for the tibialis posterior. This was accomplished by resecting the peroneal from its insertion and wending it through canals back of the fibula, above and behind the medial malleolus and into the sheath with the posterior tibial tendon. Less effective, but still offering improved results was the substitution of either the flexor digitorum longus or the extensor hallucis longus in a similar operative procedure. Because muscles are often difficult to grade before transplanting, the muscle bellies were inspected at the time of surgery. In many cases it was found that an equally strong peroneus longus and brevis increased their individual strength after separation. The authors did not find that transplanted muscles lost any of their originally graded strength.

Pictures and comparative tables accompanied this article as did illustrations of operative procedures employed by the authors.

The L. E. Phenomenon in Rheumatoid Arthritis

J. A. Friedman, J. F. Sickley, R. M. Poske, A. Black, D. Bronsky, W. H. Hartz, Jr., C. Feldhake, R. S. Reeder, and E. M. Katz (Cook County Hospital, Chicago, Illinois), ANN. INT. M., 46: 1113-1135, June 1957

Because the L. E. phenomenon was observed in diseases other than systemic lupus erythematosis, the authors investigated the relationship of this disease to rheumatoid arthritis. Other reports in this area indicate that articular manifestations of patients with lupus erythematosis are nearly indistinguishable from those with rheumatoid arthritis. Steroid therapy, nonspecific reaction in rheumatoid arthritis, and chronic lupus erythematosis are the varied explanations which several researchers offer for the occurrence of this phenomenon.

In this study, 91 patients with advanced rheumatoid arthritis were tested by various methods and 25 cases proved positive to the L. E. phenomenon. Rheumatoid nodules, Felty's syndrome, and an elevated electrophoretic gamma globulin oc-

curred more frequently in the positive group, but there were no pure rheumatoid spondylitis patients in this group.

Comparison of the clinical and laboratory features found in the positive and negative arthritic patients were similar to those of the L. E. phenomenon; however, the distinct pathologic lesions diagnostic of systemic lupus erythematosis were not present. In addition, the prognosis of untreated lupus erythematosis is very poor and although the arthritic patients had received no steroid therapy, their illness had been present for 19 years or longer. Thus, it was determined that the L. E. phenomenon in rheumatoid arthritis is a nonspecific reaction. A positive test should not mean a positive diagnosis of systemic lupus erythematosis until more specific test results have been obtained.

Experience in Reconstructive Surgery with Patients Having Respiratory Paralysis

Vernon L. Nickel and Wiley L. Renshaw (Rancho Los Amigos Hospital, Hondo, California), J. BONE SURG., 39-A: 737-740, July 1957

At the Rancho Los Amigos Hospital, there has been an increase of 95 orthopedic operations on severely involved respiratory patients in the second year between March 1954 and March 1956. This figure indicates the added number of patients considered surgical risks—some with vital breathing capacities from 0 to 30 per cent. Previously, only those with capacities of 30 per cent or better were operated upon. Increased knowledge and improved apparatus plus actual experience have been responsible for the success with these patients in such procedures as tendon transfer, osteotomy, arthrodesis, spine fusion, cervical-spine fusion and abdominal fascial transplant. During this two year period, there have been no deaths and complications have occurred in only 3 cases of the total 233.

Previous to surgery, careful evaluation of respiratory pattern and vital capacity is made, and equipment to be used during the operation is given trial use. Adequately trained personnel and proper mechanical equipment are essential, with careful premedication and postoperative observation of the patient being of utmost importance. Surprisingly enough, many of the patients with lowest vital capacities withstand the operative procedures better than those for whom respiratory equipment was not felt to be necessary.

The authors are convinced that reconstructive surgery on these severely involved respiratory patients actually contributes to a longer life. Spinal fusion reduces the progressive scoliosis and severely paralyzed collapsing torsos. Thus, the progress realized in the approach to these severe respiratory cases would indicate that the advantages far outweighed the risks involved.

Neuropsychiatric Aspects of Acute Poliomyelitis

Jimmie C. B. Holland and Martin R. Coles, (Massachusetts General Hospital, Boston, Massachusetts), AM. J. PSYCHIAT., 114: 54-63, July 1957

During the 1955 poliomyelitis epidemic in Massachusetts, the authors had the opportunity to study the neuropsychiatric aspects of 108 afflicted patients. These included 46 respirator cases, 48 patients with paralysis but without respiratory involvement, and 14 nonparalytic cases. The two oldest patients were 50 years old and 78 per cent were between the ages of 20 and 30. Two psychiatrists using the same interviewing technics talked with each of the patients, modifying their approach as the severity of illness necessitated. In a minority of cases, persons very close to the patient were also interviewed in addition to the patient contact.

Observations were made of 17 patients with varying degrees of delirium not unlike that of other neuropsychiatric conditions. Patients suffering with delirium all had bulbar or bulbarspinal involvement. It appeared in the acute stage of the disease and usually disappeared as the patient became afebrile. Two of the patients had severe psychotic difficulties before being stricken, but no difference was noted between their delirium state and that of the other patients. Delusions and hallucinations were usually enjoyable and nonfrightening, often involving taking a trip on a plane or in a boat or automobile. The authors suggest that perhaps the sound and enclosure of the respirators might have precipitated these images. Some patients described their delusions as dreams and recognized them as such, yet at other times were convinced that they were real. When their normal mental status had returned, the patients often recalled these dreams vividly and wondered about their "strange behavior."

Interesting to notice was the differences in psychological response of the three types of poliomyelitis patients. Those in the respirator showed extraordinary cheerfulness extremely out of proportion with their serious involvement. If their protective denial reaction was threatened with mention of the implicatoins of the illness, they became defiant and temperamental. Only the two oldest persons of 50 expressed doubts about recovery. Every other respiratory patient maintained that there would be a continued steady uphill course. Only when chronicity challenged their denial did they become discouraged and tearful. At the same time some patients went into stages of regression, making unremitting unreasonable demands and expressing gross rationalizations. Those requiring respiratory aid were at first reluctant and fearful, especially if it was not an emergency measure. Once adjusted, however, a great dependency developed. Often there was irrational fear of mechanical failure and the process of weaning was necessarily careful and gradual.

Respiratory patients were concerned entirely with immediate needs and desires: suctioning, breathing, tank pressures. Home and family were secondary in their thinking. The paralytic polio patients on the other hand, were most concerned about long-range planning. There was less denial of their disease than with the respiratory patients but depression was more profound and more prolonged. Physical therapy forced realization of the extent of their paralysis and some reacted with temper tantrums and insatiable demands. Doctors were accused of deceiving them and laments of "why did it happen to me?" were frequent and resentful. The more severe the paralysis, the greater the repression in some cases, while with others the disease was treated as a challenge which would be overcome through willpower alone.

Nonparalytics evidenced no delirium, denial, rationalization, or regression. Although their dread and fear of condition changes was intensified, they were no different than others who await an uncertain outcome. All considered themselves fortunate that they were spared the serious disabilities of the disease.

This study revealed also the importance of the psychiatrist on the medical team. Not only did the pa-

tients relieve themselves of pent-up emotions and thoughts but by doing so, enabled the psychiatrist to predict difficulties in treatment, management, and rehabilitation. Talks with families helped the families adjust more easily to the illness, and the morale of the patients themselves was improved by the carefully planned arrangements of the respirators suggested by the psychiatrists. Thus, the authors have illustrated by their own experience the importance and value of psychiatric service on the wards with acute infectious poliomyelitis.

Cineplasty. Results of Follow-Up Study

T. J. Canty and E. E. Bleck (U.S. Naval Hospital, Oakland, California), U. S. ARMED FORCES M. J., 8: 972-978, July 1957

Forty patients with known results from cineplasty comprise the basis of this report. Twenty-eight had biceps cineplasties and 12 had pectoral cineplasties, the operations having been performed between 1946 and 1952. All the patients were young adult males, selected on the basis of cooperation and sufficient intelligence to understand the operative procedure and the advantages of cineplasty.

The final phase of treatment was considered as the most important aspect in ensuring a good result. Postoperative exercises of the muscle motor, training in the use of the prosthesis, and functional skills were included in the program. Before discharge each patient had to pass an Achievement Test with each of the terminal devices—the Dorrance hook, Army Prosthetics Laboratory Research (APRL) hook, and APRL hand.

All patients received a standard questionnaire, devised by the U. S. Army Prosthetics Laboratory, Washington, D. C. This questionnaire survey, deemed valid in reaching conclusions, showed that 82.5 per cent of the patients who had cineplasties were using their prostheses, a figure higher than the authors anticipated and better than those reported by others.

Analysis of the results revealed that the following factors appear to be most important: (1) the selection of patients, (2) a modern and comfortable prosthesis, and (3) training in the use of the prosthesis.

Paralytic Scoliosis

Hunterian Lecture by J. I. P. James (Royal National Orthopedic Hospital), ANN. R. COLL. SURGEONS, 21: 21-42, July 1957

Using records and personal evaluation of 235 patients the author completed the third known large series studies of paralytic scoliosis. Previously, Colonna and Vom Saal attempted to correlate muscle paralysis with scoliosis curvature. Their findings that thoracic curvatures resulted from strong arm muscles on the convexity with erector spinae weakness was unconfirmed by this study. However, they also noted that curvatures in the lumbar area were due to asymmetry of the lateral abdominal flexors with pelvic obliquity and this observation was verified in the later series.

The intention of this author was to establish first, the various types of paralytic scoliosis and later to correlate the muscle paralysis with the curvature. Although charting trunk muscles is difficult, the author himself did most of the testing to gain as much objectiveness in the study as possible. Also at his disposal was a detailed report of 280 paralytics who had developed no scoliosis. Included in this report were numerous pictures and graphs recording various aspects of the study.

High thoracic curvatures were those involving the first or second thoracic vertebra. With a high trapezius on the convexity and severe rotation of the first two ribs there is gross deformity with little chance of correction. Although most scoliosis appears within a year or two after the paralysis, this specific curvature may occur many years later. This deformity is entirely due to paralysis because at least in the author's experience, there has never been idiopathic involvement in this region.

In thoracic paralytic scoliosis, there was a wide predominance of curvatures to the right. Rib rotation was more angular and compensation less complete than with idiopathic thoracic scoliosis. The length of the curve was also longer, perhaps due to the ribs on the convexity being crowded and almost vertical. In both the high thoracic and middle thoracic scoliosis, the intercostal muscles are much involved. They act as lateral flexors or supporters of the thoracic vertebral column through the ribs and when they are weakened, the ribs collapse. It was found that unilateral arm paralysis, weakness in the anterior abdominals, or in the lateral flexors, played no prominent part in scoliosis involvement. Although the prognosis is better for the middle thoracic curvature, surgery is sometimes indicated for aesthetic reasons.

A thoracolumbar curve has its apex at the eleventh or twelfth thoracic vertebra. There still remains a slight predominance of a right curve but idiopathic cases are rare. Unfortunately, paralytic cases are not rare and have a poor prognosis. There are two main types: one with weak lower intercostals on the side of the convexity and weak lateral abdominal flexors on the same side. The second has severe but symmetrical paralysis of the erector spinae and is more often a postural scoliosis than structural.

Gravity plays an especially important part in the thoracolumbar and lumbar scoliosis. As time passes, postural curves may become structural owing to vertebral collapse. To prove the influence of gravity, the author unilaterally denervated the intercostals on rabbits. No scoliosis resulted.

The least ugly scoliotic deformity involves the lumbar area as there is little rib rotation; however, more pain and muscle strain is centered here because of the collapse of the vertebral column subsequent to severe symmetrical muscle paralysis. Shorter curves in this area are the result of imbalance of lateral abdominal musculature with pelvic obliquity.

Double primary paralytic curves differ in idiopathic scoliosis and paralytic scoliosis. In the former, this type of curve is common and each is of the same degree with the double deformity well balanced. The asymmetry of the latter scoliosis is a result of asymmetrical paralysis.

Muscle return of course, is the most positive means of counteracting scoliosis, but if this does not occur, assistive measures must be undertaken. It has been discovered that the orthodox jackets of plaster and similar materials are useless in preventing progressive scoliosis; however, the Milwaukee brace, producing antigravity action, has proved valuable. Abdominal corsets used for supporting flail spines may be helpful in ambulation but are not adequate to prevent scoliosis. Fascia lata transplants have proved ineffective, but surgical correction and spine fusion have twofold indications. Not only does fusion help the deformity aesthetically, but it also

eliminates much strain on the weakened musculature. Rotation is not correctable so in the immature curve, especially in the high thoracic area, fusion must take place before rotation becomes gross. At age 10 or 11, very little rotation has taken place in the midthoracic scoliosis so this is an optimum age for operation. For the thoracolumbar and lumbar areas, fusion for stability of the spine is of utmost importance. In recent years, the Risser jacket and Stagnara jacket have allowed thoracic and lumbar correction before fusion. The Milwaukee brace has provided a similar correction attempt for the high thoracic scoliosis. The area of fusion is at the primary curve with one or two vertebrae above and below if so indicated. Results of fusion are varied because although correction is easy to attain, it is extremely difficult to maintain. The author feels that fusion for the most part prevents rather than corrects deformity and that there still remains much to be done with the problems of scoliosis.

Swivel for Proximal Radio-Ulnar Synostosis

H. Kelikian and Ara Doumanian (Northwestern University Medical School, Chicago, Illinois), J. BONE SURG., 39-A: 945-952, July 1957

Only 4 cases of traumatic proximal radio-ulnar synostosis have undergone the surgical procedure of having a stainless steel swivel inserted between fragments of the radius. Results of this procedure, however, merit enumeration of the principles of operation.

With a proximal radio-unlar synostosis, union of the proximal ends of these two bones occurs unless a large segment of the radius is resected. In itself, this creates further problems because supinator action is nullified and the remaining segment is likely to impinge on the ulna. Since the radius is no longer anchored, the wrist is considerably weakened and the lengthened ulna makes attempts at supination and pronation very painful.

The surgical procedure followed removes the supinator from its insertion and about an inch of the radius is resected distally. The swivel is then inserted between the proximal radial fragment which is fixed by synostosis and the distal radial fragment. The swivel is a cylinder shaped body with a central rod three times the length of the cylinder. This rod is placed within the medullary canal for a distance of about 1 inch in each radial fragment.

For restoration of the supinator function either the flexor carpi radialis or the flexor carpi ulnaris is reinserted into the bulbous end of the radius approximately 1½ inches above the styloid process. The flexor ulnaris is less aesthetic due to a bulky prominence over the distal dorsum of the forearm, but it is much more functional than the flexor radialis. To permit painless supination and pronation, the distal inch of the ulna is resected and the forearm including elbow and wrist is immobilized in a cast. Six weeks later, the cast is removed and functional exercises are begun.

This report included two case histories of traumatic injury but as yet this procedure is not used with congenital synostosis of the proximal radius and ulna. When contemplating its use in younger patients, the possibility of more bone callus may necessitate the use of a longer cylinder, with the girth of the cylinder approximated to that of the bone.

Current Status of the Treatment of Rheumatoid Arthritis

W. Paul Holbrook, Donald F. Hill, and Charles Stephens, Jr. (Southwestern Clinic and Research Institute, Tucson, Arizona), J. AM. M. ASS. 164: 1469-1472 July 27, 1957

Rheumatoid arthritis is a disease involving the connective tissues of the body and showing up primarily as inflamed joints with progressively crippling polyarthritis. As yet the etiology remains unknown and there is no specific cure for the disease process. There are many agents which produce some improvement either rapidly or slowly, and remissions occur without the use of any therapy. Periods of remission vary, but the disease usually recurs.

Because rheumatoid arthritis is a long-term problem, the physician needs to have a long-range basic program for his patient. Deformities can be prevented and most of these patients can be restored to lives of useful activity. The program needs to be directed to the patient as a whole and should include the following:

Psychological adjustment. The patient needs to be well acquainted with his disease in order to make adjustments to family, business, economic and other factors. It is essential that the patient learn to think in terms of months and years rather than of weeks.

Rest and activity should be carefully balanced according to pain and the degree of activity of the disease.

Diet and bowel management need to be accurately regulated.

Correction of anemia is important.

Removal of foci of infection is important in line with improvement of general health.

Relief of pain can generally be accomplished by gentle warmth and use of salicylates.

Exercise for postural alinement, to maintain motion and improve muscle tone should be done regularly.

Prevention and correction of deformities are essential.

Having established the patient on a good basic program including the elements outlined above, the physician can then select an elective measure for treatment of the disease directly. Some of these are:

Transfusions: Patients in the early stages frequently respond well to repeated transfusions.

Gold therapy: The use of Gold salts is most effective in early active peripheral arthritis with minimal joint destruction. The authors feel it offers the best chance for a long and satisfactory remission.

Climate: Some patients improve if they move to a warm dry climate, but this factor should not cause economic disruption for the family.

X-ray therapy: This is helpful in rheumatoid spondylitis.

Pregnancy: Most patients experience a remission; however, it lasts only for the term of the pregnancy.

Gluco-corticoids: These have a suppressive effect and do not alter the disease process. There are many undesirable side-effects and, in general, long term therapy has had a high failure rate. Children seem to be able to tolerate the long term use of gluco-corticoids more readily than do adults.

Corticotropin: Same results as for gluco-corticoids.

Phenylbutazone: Most useful and effective with rheumatoid spondylitis.

Traumatic Maternal Birth Palsy

J. Tweedie Brown, and A. McDougall (Royal Infirmary, Glasgow), J. OBST. GYN. Brit. Empire, 64:431-435, June 1957

Although birth palsy in newborn infants is well recognized, it is not generally known that nerve trunks in the pelvis of the mother may suffer damage during parturition. Because many recover spontaneously or consider the phenomenon as "part of giving birth," there are no definite figures for traumatic maternal birth palsy. It is estimated, however, that one in every 2,000 deliveries has some lumbosacral nerve involvement ranging from transient paresis to complete paralysis.

Several theories concerning this maternal birth palsy include one which bases it on sacral rotation. Others, however, claim that bilateral paralysis would result if this were so, and involvement of both lower extremities is very rare. Prolapse of intervertebral disks was expounded by some and use of instruments was considered the cause by still others. However, the authors agreed with those who claimed that during birth, compression of the sacral nerves in the pelvis gave rise to the paralysis and varying sensory losses. To strengthen this theory, the authors made thorough investigation at autopsy and discovered that the sacrum does not protect the lumbosacral nerve cord from compression by the foetal head as some theorists believed. By first inserting a mercury filled tube into the groove of the sacral cord and thereafter manipulating a foetal skull through the birth canal, the compression point was recorded by radiographs which definitely showed separation of the mercury within the tube at one phase of the mock delivery.

Premonitary symptoms of numbness and weakness are common in a primigravid patient during the last four weeks of pregnancy due to the foetal head attempting to engage in the pelvic brim; however, it is only in the small mother with a large foetus that there is much danger of extensive nerve involvement. All of the cases recorded in this study were of patients 5 feet in height or under, carrying a foetus weighing 8 pounds or more. Those with resulting paralysis had either spontaneous recoverey or received physical therapy in the form of massage, exercise, electrotherapy and temporary bracing until function was completely or partially regained. In general, the prognosis of maternal birth palsy is good.

The authors concluded from this study that there is no positive prevention of this palsy if there is cephalopelvic disproportion great enough to compress the lumbosacral cord but not disproportionate enough to obstruct normal delivery. Because they know now that small women carrying a large foetus have tendencies toward possible paralysis, caeserean sections can be done to prevent trauma to the nerve cord.

Bone Changes in Chronic Circulatory Insufficiency

Mary S. Sherman and Walter G. Selakovich (Ochsner Foundation Hospital, New Orleans, Louisiana), J. BONE SURG. 39-A:892-901, July 1957

The authors set out to prove that in normal adult bone, there is a variable amount of necrosis which takes place as part of the normal aging process. With numerous high-power photomicrographs of normal and pathological bone sections, they have reached several conclusions.

As bone physiologically matures, there is slow replacement by Haversian systems of the circumferential lamellae in concentric pattern by appositional bone formation. At maturity, however, the continuous activity of reconstruction and remodeling is just sufficient to meet functional requirements of adult bone. In variable numbers of areas, no osteocytes are present and in these areas of bone necrosis, there is no activity until vascular connective tissue invades and substitution begins.

Chronological age and the functional efficiency of the vascular system determines the magnitude of change but it usually is not prominent until the third decade. Although clearly defined in thick compact cortical bone, necrosis is almost always found in subchondral bone.

Interruption in the vascular supply of soft tissue usually results in gangrene. However, amputation as a result of arteriosclerosis obliterans, Buerger's disease, or traumatic laceration of the femoral blood supply are secondary manifestations of long bone blood insufficiency for which neither symptoms nor roentgenograph changes are apparent. Extra osseous vascular systems are evidently adequate to preserve the periosteum, and although the Haversian canals are enlarged and the cortical bone is spongy, the slow process of revascularization and replacement is sufficient for functional strength. In one patient, the tibia was completely necrosed but the only symptom was vascular disease, with weight-bearing in no way impaired.

In conclusion, the authors stress the fact that although peripheral vascular disease greatly increases the amount of bone necrosis, there is a normal amount of focal necrosis which occurs as part of the natural aging process of the skeleton. Changes in the amount of necrosis is due not to osseous abnormality, but rather to increased years and physiological aging of the vascular system.

Simple Method of Elevation of the Arm and Hand in Children

Thomas G. Glass (San Antonio, Texas), TEXAS J. M., 53: 530-532, July 1957

A method for successfully maintaining elevation of the upper extremities of children, as used in 100 cases of upper extremity infection and injuries, is described. It consists of encasing the affected arm in a piece of 3 inch stockinette, the upper end of which is taped to the thorax in such a manner as to avoid circumferential constriction. The lower end of the stockinette is tied to a piece of gauze which in turn is attached to an intravenous stand with a piece of rubber band. The length of gauze is adjusted to elevate the arm properly.

Some advantages of this method are: (1) the arm is maintained in an elevated position regardless of the activity of the child; (2) ambulation is possible if the intravenous stand has wheels; (3) the upper extremity is not completely immobilized, allowing an opportunity for exercise; (4) packs can be put in plastic bags and stay in position satisfactorily; and (5) very little maintenance and observation by the nursing staff is needed to maintain elevation of the arm.

The author states this method has been found convenient, safe, and very satisfactory.

Our Abstractors for November

We are indebted to the following Association members for their assistance in preparing the abstracts in this issue:

Joan Bissonette Jean Cuthbertson
Margot Trimble

Book Reviews . . . . .

Current Therapy 1957. *By Howard F. Conn, Editor, and George E. Burch, M. Edward Davis, Vincent J. Derbes, Garfield G. Duncan, Hugh J. Jewett, Perrin H. Long, Clarence S. Livingood, H. Houston Merritt, Walter L. Palmer, Hobart A. Reimann, Cyrus C. Sturgis, Robert H. Williams, Consulting Editors. Ed. 9. Cloth; price $11.00. Pp. 731, W. B. Saunders Co., Philadelphia, 1957.*

Current Therapy 1957 is the ninth in a series of annual editions. It contains the current methods of treatment of the many different diseases which comprise the field of internal medicine. Dr. Conn, the editor, is assisted by a group of 12 consulting editors who choose and review the articles to be included in each edition. Each article is signed by the contributing author. With each edition the book presents "the current thinking of a leading authority or authorities on the therapeutic problem . . ."; hence, *Current Therapy* is a compilation of the best methods of medical management of the problems of internal medicine.

Preceding editions have contained suggestions for using physical therapy in appropriate conditions. The 1957 edition devotes more space to the degenerative diseases and their effective management and, I believe, reflects the preoccupation of medicine with the best management of these incapacitation diseases. There are suggestions for the timely use of physical therapy in a number of different conditions and it emphasizes the contribution which adequate physical therapy can make in preventing avoidable deformity and promoting optimal rehabilitation of the patient.

One of the more detailed articles deals with the rehabilitation of the patient with hemiplegia. The authors begin passive motion of all four extremities at about the second day in thrombosis and up to the seventh day in cerebral hemorrhage. The exercises are designed to preserve the range of motion which was present prior to the onset of hemiplegia. There is progression of activities as rapidly as the condition of the patient permits. The authors caution against prolonging the sitting-up period beyond the point of comfort for the patient since pain from ischemic skin may occur. Radiant heat and massage are used for painful joints but not for nonpainful joints. Edema is combated by elevation and kneading massage. Early management consists of the prevention of contractures by supervision of posture and passive motion. A firm bed is advocated. The "position of function" of the affected joints is achieved by planned positioning and motion. Detailed instructions for each joint are given for positioning, normal range of motion exercises and active exercises. The management of the later stages carries the patient through bed activities, ambulation, self-care activities, and speech therapy. It is suggested that an old Oxford shoe with the toecap cut off and nailed to the proximal long edge of a 6 by 12 inch board may be the best way to control the position of the foot. (Other authors writing of cerebral vascular accident, thrombosis, and hemorrhage agree in essence with the above plan.) One author cautions against overexercising and suggests limiting exercises to 10 or 15 minutes, twice a day.

Treatment for the different types of cerebral palsy is outlined. In spasticity the aims are: positioning for normalizing of muscle tone and individualized muscle training to develop reciprocal motion, stretching the tight muscles, and strengthening the weak muscles. The training begins with passive motion and progresses to active motion with range of motion restricted to prevent "strength reflex." The exercises are given for one half to one hour or twice a day by the therapist or parent. Braces are used as an adjunct to physical therapy. In dyskinesia, positioning is aided by head supports and braces. Repetitive exercises here are designed to achieve relaxation. For rigidity the author recommends daily passive stretching and/or braces to hold the affected joints in neutral position during growth. Early correction of strabismus in the ataxic child contributes to the learning of balance.

A program of physical therapy is outlined for rheumatoid arthritis which includes balanced rest with good posture and positioning of limbs, application of heat, moist or dry for 20 to 30 minutes followed by exercises to maintain joint motion in damaged joints, and to overcome tendencies to contracture or deformity. Every joint should be put through its maximum range of motion several times a day. The authors give to each patient a copy of the booklet on home care prepared by the scientific committee of the Arthritis and Rheumatism Foundation. Erect posture, firm bed with bed board, and deep breathing exercises are most helpful in spondylitis.

The treatment of subdeltoid bursitis is considered in its several stages. For the hyperacute process, complete rest of the shoulder and application of cold rather than heat is used. For the acute or subacute stage, heat in the form of an electric pad (1 hour), or infrared heat (½ hour), or hot compresses (20 to 30 minutes) to the shoulder once or twice a day are comforting. Exercises are begun as soon as tolerated after the use of heat and are increased from once to several times a day. In subacute and chronic cases there is more active physical therapy with more strenuous devices and more prolonged exercises.

In degenerative joint disease osteoarthritis, active exercises are carried out gently and slowly once or twice a day after the application of heat. Muscle-setting exercises (with little or no joint motion) are useful when existing abnormalities can be corrected or when improvement in muscle tone might help to stabilize a joint or improve its use with decreased strain and trauma.

The only physical therapy used in manic depressive disease is the continuous warm tub with restraining sheet which is helpful in quieting the overactive patient. No heat is used in beri beri, and passive and active motion must avoid injury when sensation is blunted. As soon as the active symptoms of rheumatic fever have subsided passive and active bed exercises are begun. In scleroderma physical therapy is as helpful as drugs. A 30 minute warm bath daily, moderate heat, and daily massage for 30 minutes with a bland oil are suggested.

For the acute stage of polyneuritis dry heat and passive movement of the diseased limbs are used. In the subacute and chronic stages whirl pool baths, passive and active exercise, gait training, and muscle re-education are continued as long as is necessary.

Physical therapy is mentioned in 20 articles, aggregating a total space of about 7 pages.

Each article is clearly and effectively presented, and there are tables of Metric and Apothocaries Systems of Weights and Measures, and a listing of Normal Laboratory Values of Clinical Importance. The volume is well indexed by author and subject matter.

Psychology of Human Behavior for Nurses. *By Lorraine Bradt Dennis, R.N., M.S. Instructor of Psychology for Nurses, Pennsylvania State University. Formerly, Instructor of Nursing Arts, Plattsburg State Teachers' College, New York; Lecturer in Psychology, Drake University, Des Moines, Iowa. Cloth; price $3.50. Pp. 250; illus. W. B. Saunders Company, Philadelphia, 1957.*

The author is especially well qualified to prepare a textbook on psychology applied to nursing. Her book represents a synthesis of the information and understanding about nursing and human behavior which she has acquired from years of experience in nursing and teaching.

Psychology of Human Behavior for Nurses presents 14 chapters of well written material that deals with the following aspects of the subject: Psychology–Science of Human Behavior, Personality, Theory of Personality Structure–Sigmund Freud, The Theory of Needs, Sex, Secondary Needs, Man and His Emotions, Frustration and Conflict, Defense Mechanism, Defenses that Went Wrong, Psychotherapy–Regaining Mental Health, Psychosomatic Medicine, The Psychological Stages of Man, and What Can Be Done About Ourselves.

Mrs. Dennis has oriented her discussions to the mental hygiene point of view and directs the impact of the entire volume toward definite goals that she has set for students to accomplish. An instructor who hopes to help student nurses make desirable responses in the many difficult adjustments required of them will find this book indeed helpful. A course for young nurses based upon the material in this text and conducted under the supervision of an instructor who has ingenuity could very well achieve the author's goals. The individual instructor, however, will find it necessary to supply his own study questions, suggested readings, and study activities for each unit of content matter. The text is readable and compiled in a clear manner, but does lack the aids for the instructor commonly found in textbooks. The objectives which the author would hope to reach with her students through the guidance offered in the book are attainable and would be gained if each student is required to supplement study of the text itself with other kinds of class activities. As outlined in the preface of the book, the goals of the course are: 1) to help students accomplish expected adjustments, 2) to assist students to understand themselves, their associates, their patients better, 3) to emphasize the nurse's role in the emotional well-being of her patients, 4) to provide students with basic concepts regarding human behavior, 5) to guide students in their search for answers to the question of "why people behave as they do."

The textbook is well printed and the divisions are well organized and in logical sequence. The illustrations are numerous and imaginative, adding an appreciable value to the text.

Medical Progress, 1957. A Review of Medical Advances During 1956. *Edited by Morris Fishbein, M.D., Professor of Medicine, University of Illinois College of Medicine, Chicago. Consulting Editor, Postgraduate Medicine. Medical Editor, Britannica Book of the Year. Cloth; price $6.00. Pp. 367. McGraw-Hill Book Company, New York, 1957.*

The increasing mass of medical literature during the past decade has made it almost impossible for a person to keep abreast of the advances being made outside of his own special field of interest. This has resulted in the publication of volumes that abstract and/or review significant contributions. The present volume is the sixth of one such series edited by Dr. Morris Fishbein.

The volume consists of a series of sections each of which is devoted to a particular medical specialty, such as, medicine, neurology, physical medicine and rehabilitation. Each of these sections is written by a recognized authority in his field. These sections are further subdivided into various areas; e.g., the physical medicine section is subdivided into medical diathermy, other methods of thermotherapy, therapeutic exercise and kinesiology, physical medicine and rehabilitation in neurolgic conditions, rehabilitation programs, etc. For each of these areas, the author reviews what he considers to be the important publications during 1956.

As is true in most volumes of this kind, each author deals with his subject matter in a different way. Some authors actually review and discuss the significant contributions, while others put together summaries of various papers without making too great an effort at integration. Both forms of presentation have their advantages and disadvantages.

One difficulty with the presentation of various specialized interests is that there is a certain amount of overlap in the discussions; for example, even though there is an entire section devoted to diabetes, the section on endocrinology has a subsection also devoted to diabetes. In the section on medicine, there is a discussion of tranquilizers, which are also reviewed in the section on psychiatry. This has an advantage in that it may result in the reader obtaining differing points of view.

This volume is of value to those interested in obtaining an over-all view of medical research during 1956. Needless to say, the reader will have to go to the original publications for the details. But this type of review is necessary for those specialists who would like to keep up with progress made in other fields of medicine.

Concise Anatomy. *By Linden F. Edwards, Ph.D., Professor of Anatomy, Ohio State University, Columbus, Ohio. Ed. 2. Cloth; price $7.50. Pp. 502; illus. McGraw-Hill Book Company, New York, 1956.*

This text deals with descriptive and applied anatomy of the human body and included embryological and histological aspects. The human body is described by regions rather than by systems and in this manner parallels the methodology of laboratory dissection. The embryology and histology are presented under specific regions when feasible. This is in accordance with the recent trend to correlate gross anatomy, embryology, and histology. At the end of each chapter a section on applied anatomy has been added to this edition. The text is profusely illustrated with many of the classical illustrations found in the larger standard texts of anatomy, embryology, and histology.

The cover jacket states that this text is designed for students in the allied health fields which includes physical educators and physical therapists. The author has undertaken the monumental task of collecting within 500 pages in an economical fashion all the pertinent data related to the basic principles of human anatomy and the over-all structure of the human body. This has been admirably accomplished in many respects as a wealth of material is contained in a book of moderate price range.

Although there are numerous illustrations which are well chosen, the reproductions in many cases are poorly done. This detracts from the usefulness and interest value of the

book. Also, muscle actions are occasionaly stated that are not in conformity with electromyographic findings. The reviewer also has the impression that students in the allied health fields would be overwhelmed by definitions without adequate explanation. However, the well informed and skillful teacher teaching a correlated anatomy course of sufficient length, particularly with laboratory dissection, may perhaps find this book useful as a text for students in the allied health fields.

Biblio-Therapy Reference Guide. *Edited by Harry E. Smithson, of We, The Handicapped, Inc. Paper; price $3.50. Pp. 75. We, The Handicapped, Inc., Detroit, Michigan, 1956.*

Biblio-Therapy Reference Guide was developed as a result of the many inquiries received by We, The Handicapped, Incorporated, from patients, parents, students, professional and lay personnel for assistance on diversified problems encountered by the handicapped. Prior to this Guide no authoritative reference covering physical disability in all its phases was available.

Its contents are made more complete with inclusion of a short presentation about vocational rehabilitation—what it is, how it affects the patient and his family, and how to apply for rehabilitation. An alphabetical listing of the addresses of state-federal rehabilitation agencies follows to complement the first chapter. Because some of the entries are out of print and because it is unlikely that any library will have a complete listing of the specialized books mentioned in the Guide, a section giving detailed information on how to use the public library and its special services is thoughtfully presented. For those whose physical disabilities make normal reading difficult or impossible, the "Reading Aids" chapter should be helpful.

The "heart" of the Guide naturally is a listing of books, both factual and fictional with synopses, classified in alphabetical order according to disability. The price of each book, date of publication, and publisher is also given. The inclusion, in a separate section following the bibliographies, of a directory of both United States and foreign publishers and organizations reviewed in the bibliographies seems superfluous. In the opinion of this reviewer the alphabetical listing of handicapped persons in such a guide is interesting but redundant unless direct reference to specific bibliographies reviewed in the Guide concerning these personalities is given. It is further felt that greater assistance would have been given the reader if the disabilities had been included in the contents with page numbers giving their location in the Guide. The chapter dealing with selected pamphlets and periodicals, which are classified also according to disability, might have been more advantageously presented had they been included with the bibliographies.

Use of the *Biblio-Therapy Reference Guide* by the student, the handicapped, the parent, physician and other professional and lay personnel in the field of rehabilitation would be facilitated if all literature reviewed in the Guide were more compactly presented and more easily located, however, for all interested in the many problems of the handicapped, as well as for the librarian, the Guide should be an indispensable reference aid. For every organization associated with the handicapped, the Guide should prove invaluable to those they serve.

The reviews here published have been prepared by competent authorities and do not represent the opinions of the American Physical Therapy Association.

Our Book Reviewers for November

Dorothy C. Billenstien, Ph.D., Instructor in Anatomy, Albert Einstein College of Medicine, New York, New York.

Mary H. Green, M.D., Instructor, Physiology and Medicine, D. T. Watson School of Physiatrics, Leetsdale, Pennsylvania.

A. Lilienfeld, M.D., Chief, Department of Statistics and Epidemiology, Roswell Park Memorial Institute, Buffalo, New York.

Catherine McClure, Ph.D., Associate Professor and Chairman of Department of Nursing, University of Pittsburgh, Pittsburgh, Pennsylvania.

Ray H. Trlica, Supervisor, Physical Therapy Department, St. John's Hospital, Springfield, Missouri.

Coming Meetings

November 4 - 8	American Hospital Association — American Physical Therapy Association Institute for Physical Therapists, Somerset Hotel, Boston
November 6 - 8	Conference on Electrical Techniques in Medicine and Biology, Sheraton Plaza Hotel, Boston
November 11-15	American Public Health Association, Public Auditorium, Cleveland
November 13-16	International Council for Exceptional Children, McAllister Hotel, Miami

(*continued from page* 739)

step along the way toward answering these troubled questions."

Dr. Baumgartner observed that out of a wider concept of neurological disability as a national problem comes hope for solution of individual problems.

What's New .....

For more information on items write to The Physical Therapy Review, 1790 Broadway, New York 19, N. Y.

New items which may be of interest to physical therapists will be mentioned in these pages each month. The accompanying explanations are made by the manufacturers and have not been investigated by the *Physical Therapy Review*.

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110. Automatic Door Opener

Invisible Dor-Man is the ideal automatic operator for all swing-type doors in commercial buildings, hospitals, schools, restaurants, stores or wherever there is high-frequency door use, according to the manufacturer. Recent improvements and refinements of design have been incorporated in eight models of automatic door openers.

Available in single units or pairs, the Invisible Dor-Man's design changes center around three areas—a larger and sturdier hinge, a new type molded mat and a simplified heavy-duty power unit.

The molded carpet is ½-inch thick with aluminum molding for all four sides. It is impervious to penetration of water. The power unit for both single and dual units is a low voltage, electrically hydraulic pump requiring only one 110-volt circuit plug-in receptacle.

Safety features now incorporated in the Invisible Dor-Man include: doors always open away from persons entering; doors will not open if a person is standing in way of door's swing; if power fails, doors will operate manually; there is a panic breakaway to convert "in" doors to "exits" in emergencies. Dor-O-Matic Division, Republic Industries, Inc.

111. Tub-Model Whirlpool Bath

Dakon model ETE-B whirlpool bath, the manufacturer states, can be quickly and easily installed in any bathtub for convenient, on the spot hydro-massage. Ideal for doctors' offices, clinics, convalescent or patients' homes, this economy whirlpool bath assures equal pressure distribution.

The chromium electric turbine ejector delivers 55 gallons of water per minute at a constant velocity of 3,000 linear feet per minute. The

built in aerator mixes and delivers about 20,000 cubic inches of forced air, preheated to a constant 144°F., into the ejected stream. The turbine is powered by a ⅓-hp, 3,500-rpm permanently lubricated motor with special bearings that preclude damage, even if operated out of water. Motor noise is reduced to a nominal hum. Dakon Tool & Machine Co., Inc.

Index to Current Literature

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Influence of Age and Sex on Susceptibility and Clinical Manifestations in Poliomyelitis. Louis Weinstein, N. England J. M., 257: 47-52, July 11, 1957

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Classified WANT-ADS

NEEDED IMMEDIATELY: CHIEF physical therapist and 1 STAFF therapist for well equipped and established department. Interesting and challenging positions. Excellent medical supervision. Both inpatient and outpatient treatment. Salary commensurate with experience. Liberal personnel policies. Write or phone Personnel Director, Butterworth Hospital, Grand Rapids 3, Michigan.

WANTED: ASSISTANT THERAPIST. Good opportunity for recent graduate, either male or female. Fully equipped department. Two weeks' vacation, holidays, sick leave. Good starting salary with regular increments. Write Raymond T. McHugh, Administrator, Memorial Hospital at Exeter, Exeter, California.

OPENING for a qualified physical therapist in a large physical therapy department. Excellent living conditions on the grounds; many fringe benefits; salary excellent. Contact Highland View Hospital, Department of Personnel Relations, Harvard Road, Cleveland 22, Ohio.

PHYSICAL THERAPIST: Wanted for staff position in new well equipped department in 250-bed hospital. Forty-hr week, paid vacation, sick leave; $3,800 per year to start. For further information write: Mrs. Helen Ransky, Roosevelt Hospital for Diseases of the Chest, Metuchen, N. J.

MEN AND WOMEN

San Diego has a permanent opening for a physical therapist experienced in working with handicapped children. Salary $397-$483. For details write County Civil Service, Room 403 Civic Center, San Diego 1, California.

QUALIFIED PHYSICAL THERAPIST. Immediate placement in an outpatient cerebral palsy training center. Personnel policies excellent. Liberal salary. Five-day week, 9 A.M. to 3:45 P.M. Contact Robert Schlitt, Director, Peninsula Cerebral Palsy Training Center, Walter Reed School, 901 Twenty-fourth Street, Newport News, Virginia.

IMMEDIATE OPENING for physical therapist with experience to work with both adults and children, including orthopedic school pupils, in expanding treatment center. Social Security, paid vacation and sick leave. Five-day, forty-hour week. Contact: Christine Haukland, R.P.T., Junior Service League Orthopedic Center, 1219 Dunn Avenue, Daytona Beach, Florida.

IMMEDIATE PLACEMENT for physical therapist: 128-bed, fully accredited general hospital; 40-hour week, paid vacation and sick leave, laundry of uniforms, 7 paid holidays. Salary open. Apply: Director, Charlotte Hungerford Hospital, Torrington, Conn.

CALIFORNIA offers attractive opportunities to GRADUATES OF APPROVED PHYSICAL THERAPY SCHOOLS. Positions open in State Hospitals, Veterans Home, and special schools for cerebral palsied children. Require U. S. citizenship and registration with California Medical Board. Excellent employee benefits and retirement annuities. No experience required to start at $395 a month, raise to $415 after 6 months; annual merit increases and promotional opportunities to $530. Write State Personnel Board, Box 71, 801 Capitol Avenue, Sacramento, California.

PHYSICAL THERAPIST (male or female) wanted for 72-bed rehabilitation center. Must have New York State license or eligible to receive one. Salary open. Write Superintendent, Reconstruction Home, Inc., 318 So. Albany St., Ithaca, New York.

LAS VEGAS, NEVADA: Needs experienced P.T. to be in charge of new Easter Seal Treatment Center. Salary about $5,000. Liberal employment benefits offered. Apply Nevada Society for Crippled Children, 232 West 1st Street, Reno, Nevada.

(continued on next page)

Classified WANT-ADS

RATES

The rate per insertion is $1.00 per line. Typewrite your advertisement carefully and count 50 characters and spaces per line.

ALL WANT-ADS MUST BE PAID FOR IN ADVANCE. Make checks or money orders payable to the American Physical Therapy Association.

Closing date for copy and cancellations is two months preceding publication date.

Institutions or physical therapists who do not wish their identity known may arrange for Blind Ad Code No. All such want-ads must include the following which will be counted as 2 lines:

Address replies to ..... care of **The Physical Therapy Review, 1790 Broadway, New York 19, N. Y.**

IMPORTANT

It is understood and agreed that the publisher shall have the right to reject or change the wording of any advertisement which in the opinion of the Editorial Board shall not be in agreement with the ethical standing of this publication.

Classified WANT-ADS

PHYSICAL THERAPIST: Wanted for active, well equipped department in 118-bed hospital with expansion program underway. Pleasant surroundings in north suburb of Chicago; modern housing. Recreational facilities and cultural activities available. Good salary, 40-hour week, varied cases treated. Apply to Personnel Director, Highland Park Hospital, 718 Glenview Avenue, Highland Park, Illinois.

QUALIFIED PHYSICAL THERAPIST (full or part time). Air-conditioned therapy department of 500-bed general hospital includes four therapists and an occupational therapist directed by a physiatrist. Attractive starting salary, working conditions, and fringe benefits. Apply: Director of Personnel, Touro Infirmary, 3516 Prytania St., New Orleans, La.

QUALIFIED PHYSICAL THERAPIST wanted by November 15 for new 87-bed modern general hospital in town of 35,000 in sunny eastern New Mexico. Completely modern department with all new equipment. Starting salary $350, two weeks vacation, liberal personnel policies. Graduation from accredited school required. Apply Eastern New Mexico Medical Center, Roswell, New Mexico.

Physical therapist for REHABILITATION CENTER in industrial area. Good starting salary, regular increments, 40-hr. wk., 5 wk.-vac., S. S., paid hospitalization. Apply Christine K. Kline, P.T., Executive Director, 209 W. Woodland, Youngstown, Ohio.

PHYSICAL THERAPIST: Staff position. Opportunity for varied experience; 650-bed general hospital, near center of cultural and educational activities. Vacation, sick leave and social security benefits. Apply Personnel Director, Harper Hospital, Detroit 1, Michigan.

VISITING NURSE ASSOCIATION has openings for female physical therapists in newly developing program. Salaries $4,836-$5,712. Starting salary depends on qualifications and experience; 40-hr. week, three-wk. paid vacation. Liberal sick leave and holidays. Positions available in city or surburban areas. Eligibility for Calif. registration required. Apply Exec. Director, Visiting Nurse Association of Los Angeles, 2530 W. Eighth St., Los Angeles 57, Calif.

QUALIFIED STAFF physical therapist. Female preferred; 450-bed general hospital, 40-hr. week. Social Security, sick leave and holiday benefits. Three weeks' vacation. Salary open. Apply: Personnel Office, Lancaster General Hospital, 525 North Duke Street, Lancaster, Pennsylvania.

WANTED IMMEDIATE: Opening in Physical Therapy Department with the Northeast Colorado Health Department. Opportunity for advancement, very modern department, has outpatient clinic, good salary, liberal vacation, five-day week, 11 legal and state holidays off. Will have supervision. Prefer male therapist. Apply to R. Neil Hunter, Chief Physical Therapist, Northeast Colorado Health Department, 700 Columbine, Sterling, Colorado.

IMMEDIATE OPENING for experienced physical therapist in Private Day School for Crippled Children in Boston, Mass. Small case load, excellent working conditions. September to June. Starting salary $3,500. Write: Superintendent, Industrial School for Crippled Children, 241 St. Botolph St., Boston 15, Mass.

Immediate opening for STAFF PHYSICAL THERAPIST in new children's 30-bed multi-disability facility. Unit of a medical center which includes 500-bed hospital, medical and nursing schools and progressive research program. Increasing emphasis rehabilitation training. Unit is completely equipped and air conditioned, in attractive setting near University. Salary $3,456-$4,320. Apply Martha Norris, Coordinator, University of Virginia, Children's Rehabilitation Center, Charlottesville, Va.

WANTED: Physical therapist for staff of Department of Rehabilitation of Physical Medicine Department. Completely new facilities. Good salary; 40-hour week. Apply to Administrative Assistant, the Reading Hospital, Reading, Pennsylvania.

WANTED: QUALIFIED physical therapist to serve as Consultant on a Visiting Nurse Association Staff and to carry a small caseload. Prefer person with experience. Forty-hour week, 30-day vacation, Retirement Plan. Salary commensurate with experience and qualifications. Write Marie Winkler, Director, Visiting Nurse Association, 615 North Alabama Street, Indianapolis, Indiana.

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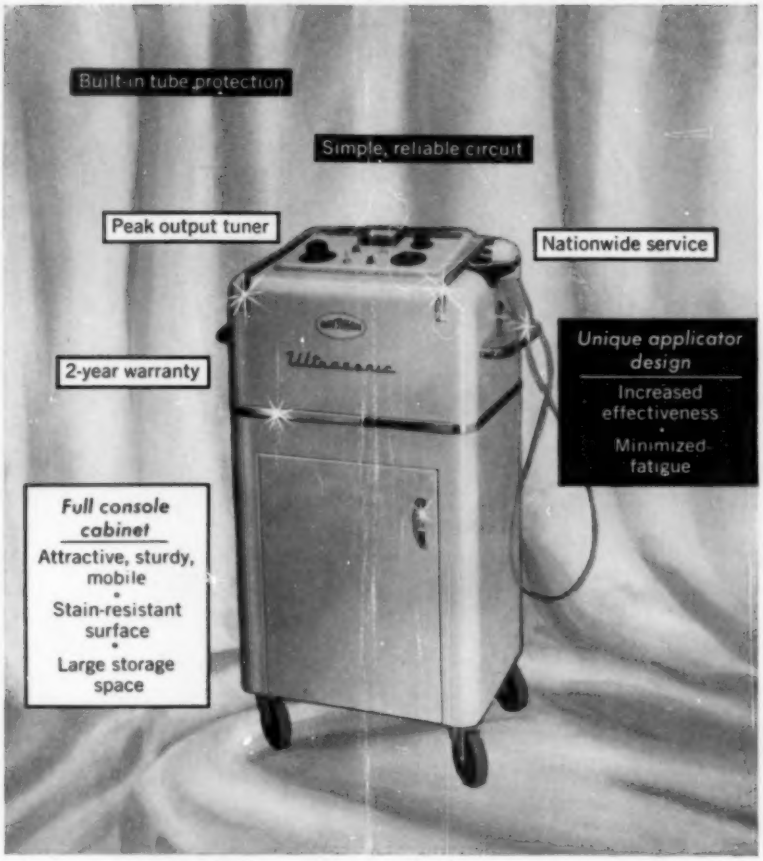

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